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SEPTEMBER 4, 1937

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Railway Age

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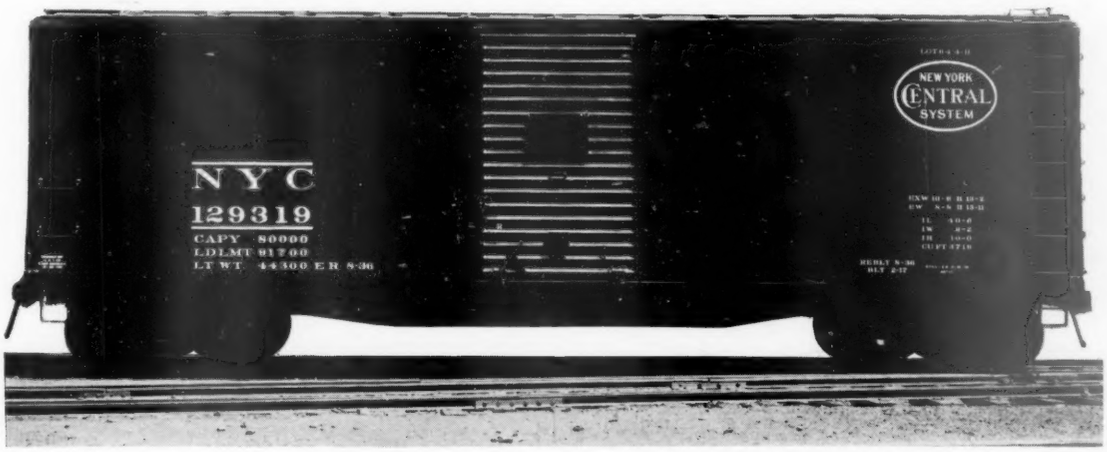
THIS YEAR

A high class Box Car of 1937

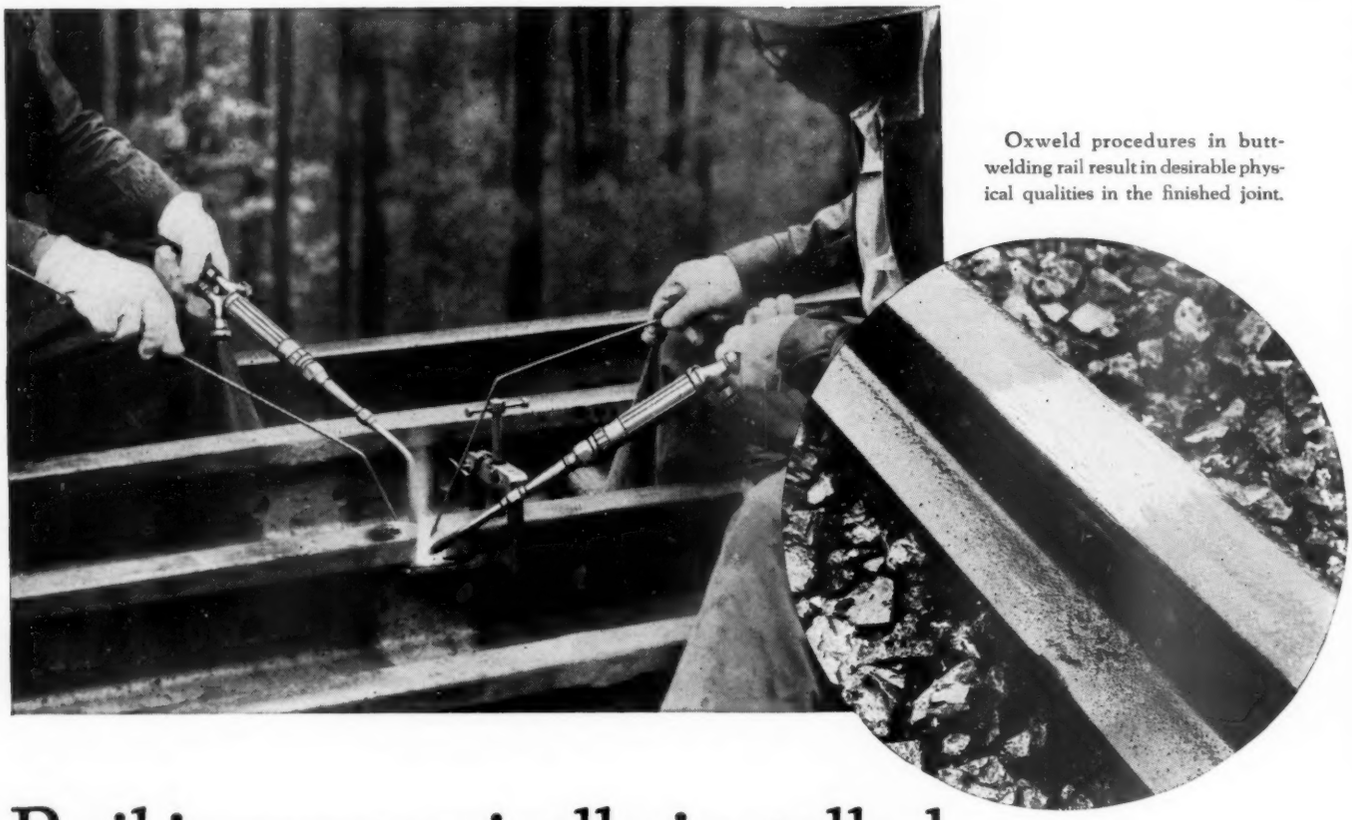
After application of Youngstown Steel Sides and Doors



"All that was good—was saved"

YOUNGSTOWN STEEL DOOR COMPANY

eveland Chicago New York Youngstown



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OXWELD RAILROAD SERVICE

1912-1937

A QUARTER OF A CENTURY OF SERVICE TO THE MAJORITY OF CLASS I RAILROADS

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Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 103 September 4, 1937 No. 10

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Tells how this road makes rail continuous between insulated joints, by employing electric flash and Thermit welds to produce lengths of 780 ft. or more on cars, and Thermit welds for field closures.

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An article telling how the I. C. C. chairman believes that a unified system would simplify rates and reduce waste.

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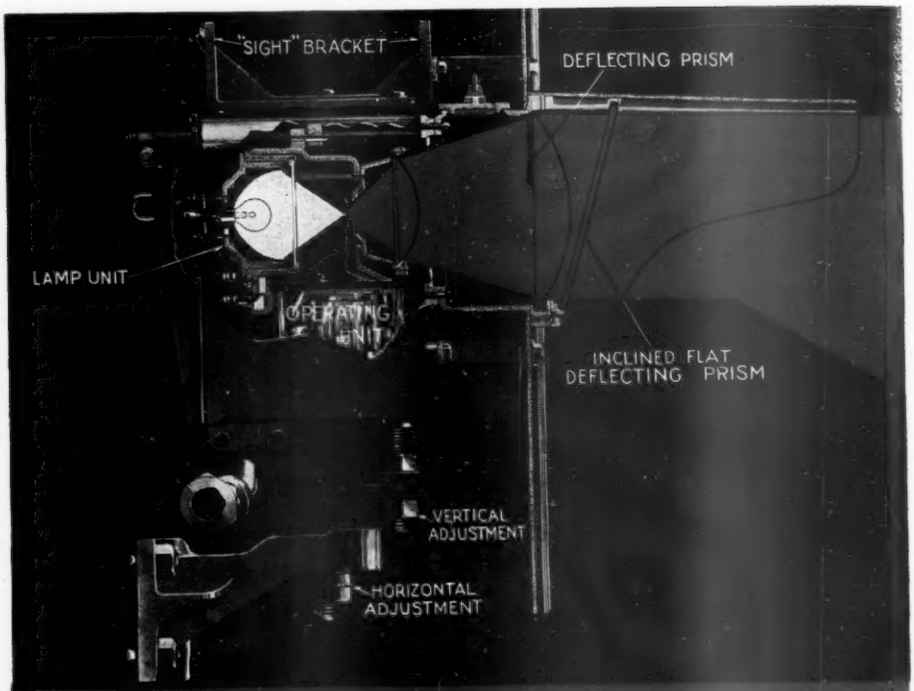

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NEW YORK MONTREAL CHICAGO ST. LOUIS SAN FRANCISCO

SWISSVALE . . . . . PENNSYLVANIA

The Week at a Glance

CARLOADINGS: In the August 21 week revenue freight loadings totaled 781 thousand cars, an increase of 6.2 per cent over the same week last year.

●

CROSSING MISHAPS: Grade crossing accidents are on the increase. In the first five months of this year 752 persons were killed at crossings—*an increase of 17 per cent over a year ago.* The total number of such accidents increased in less proportion (14.6 per cent) than the deaths, indicating an increase in the proportion of fatalities to the number of accidents.

●

N. J. RATE PLEA: The State of New Jersey is seeking once more to establish a differential in freight rates between the West and East banks of the Hudson. It has petitioned the I.C.C. for a reopening of the New York Harbor lighterage case (decided contrary to Jersey's contentions in 1934). N. J. interests object to the railroads absorbing the costs of lightering freight in New York Harbor, which places industries on the East bank of the Hudson in the same rate postion as N. J. industries.

●

PENSIONS: The Railroad Retirement Board has already granted about 65,000 pensions—55,000 of them being those already on the railroads' pension rolls when the Retirement Act was passed, and 10,000 of them being new pensioners. Applications for pensions are coming in at the rate of about 500 a day, and annuitants are dying at the rate of about 15 a day.

●

N. E. PASSENGERS: New England railroads are enjoying a large increase in passenger traffic this summer as compared with last year. The New Haven in July had passenger revenues 14½ per cent above last year (as compared with a decline of 0.3 per cent in freight revenues), and Boston & Maine passenger earnings were 12.7 per cent up over last year (with freight revenues 2.2 lower).

●

TRAINLOAD RATES: Chairman Miller of the I.C.C. threw out a polite hint that the railroads ought to explore the possibilities of trainload rates—the occasion being his address before the meeting of the Utilities Commissioners at Salt Lake on Tuesday of this week. He also suggested consolidation of all railroads into one national system.

●

TRAIN WAGES HIKED: Train and engine service employees are already enjoying an increase in their hourly wages which is in most cases considerably more than the 5-cents-an-hour raise granted to non-operating employees. This fact is revealed in the leading editorial herein which discloses from I.C.C. statistics that passenger engineers in 1936 got 18 cents more per hour than they did in 1929; passenger firemen 17 cents more; through freight engineers and conductors 16 cents more; through freight firemen and brakemen 13 cents more. If these employees would work the same hours as they did in 1929, their paychecks would be running as much as 16 per cent larger than before the depression. But they want the increase in total wages as well as a great reduction in hours; which latter they are already enjoying.

●

FRENCH COMBINE: The six railway systems of France (four private and two government-owned) are to be merged into a single company on January 1 with the government holding control through ownership of 51 per cent of the stock. Thus government ownership wins in France—but the existing condition practically amounted to government ownership anyhow, with the roads operating perennially in the red and the government guaranteeing interest to investors.

●

CONTINUOUS RAILS: All the new rail which the Delaware & Hudson laid this year (60 miles, single) was in continuous welded sections, each a mile or more long. A new type of weld is being introduced (known as the "electric flash butt") in this work, but Thermit pressure welds are being continued also. An illustrated article herein tells how the work is done.

●

HIGH-TENSILE STEEL: In freight car construction, the new high-tensile steels have demonstrated their economies, an analysis of which by A. F. Steubing, engineer for U. S. Steel, is published in this issue. Included in the article are tables which show the weight reduction achieved in important car parts, for box and hopper cars, by the substitution of high-tensile for copper-bearing steel; and also the additional cost involved in using the newer steel. From the data presented, service expectancy and decreased weight may be directly compared to increased cost as a means of determining the net economies to be gained.

●

R.R. BUYING SLACKENS: Increased wages and taxes, and uncertainty as to the outcome of such measures as the train limit bill, have slowed up railway buying—which means that some railway employees are benefiting at the expense of employees of the manufacturing industries; and also at the expense of those railroad employees who otherwise would have jobs in maintenance and construction work. Statistics of railway purchasing for the second quarter of the current year—which are set forth in an article herein—were 50 millions less than in the first quarter. And the physical volume of purchases (but not the money value) in the second quarter was probably lower than in the second quarter last year.

●

NEGRO SOLON COMPLAINS: Arthur Mitchell, colored Congressman from Chicago, has complained to the Interstate Commerce Commission of being forced to ride a "Jim Crow" car in Arkansas when he held a first class ticket and wants the commission to end alleged discrimination against negro passengers.

ROADS EARN 2.7%: Net railway operating income for the first seven months of the year was 358 millions and the rate of return on the investment was 2.73 per cent. Last year's seven-month net was 300 million, or 2.3 per cent on the investment. In July alone, however, net operating income this year was lower than a year ago—60.5 millions as against 61.7 millions.

●

SLEEPER CABS: The train service brotherhoods are fully awake to the harm done them by low labor standards in highway transportation, and have filed a brief in vigorous protest against Examiner Snow's proposed report to the Bureau of Motor Carriers okaying "sleeper cabs" on trucks and permitting truck drivers to work 60 hours a week. What the brotherhood chiefs see less clearly is that it is the *difference* between labor conditions on the highway and on the railroads which endangers railroad employees' jobs; and that this dangerous differential is promoted quite as much by boosting standards on the railways as it is by setting them too low on the highways. Consistency by the brotherhoods in their stand on the Snow report would call also for briefs from them against the train limit bill, the 20-per-cent pay rise demand, and "featherbed" working rules.

●

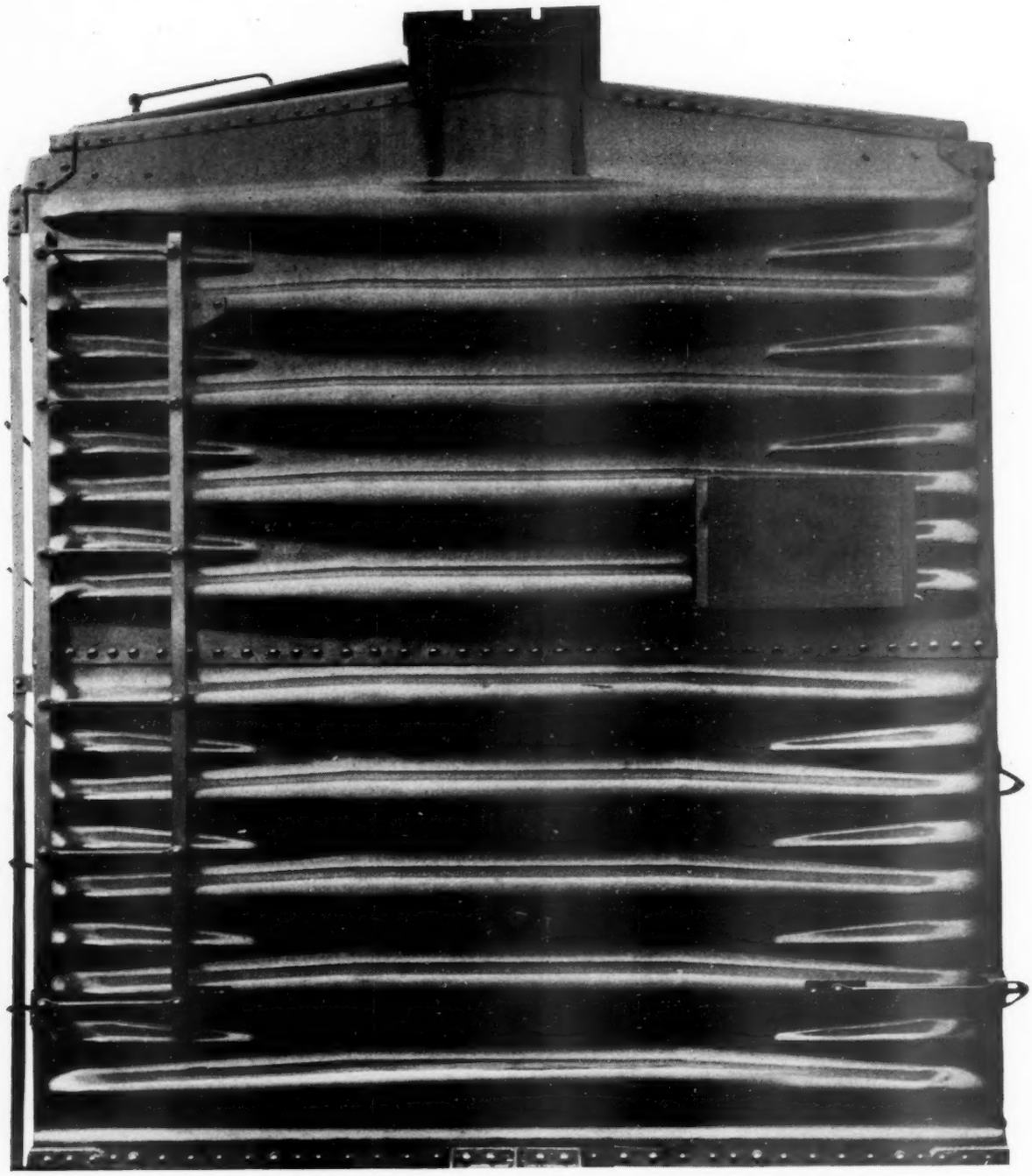
C. & O. MERGER: The I.C.C. should authorize the Chesapeake & Ohio to acquire control of the Nickel Plate and the Erie by purchase of their stock in the opinion of Examiner Molster, who has written a proposed report to that effect. The stock the C. & O. would acquire (57 per cent of N. K. P. and 56 per cent of Erie) is now owned by a C. & O. subsidiary—Virginia Transportation Corp.

●

N. H. BUS MERGER: Long-distance bus lines of the New Haven (New England Transportation Company) will be merged with those of the New England Greyhound lines, in which the New Haven would buy one-half interest, if the I.C.C. approves the proposal laid before it this week. The reason for the move is the unprofitable operation of long-distance buses in New England since the railroads reduced their fares. The N. H. subsidiary would continue to operate its local bus routes, these not being involved in the merger plan.

●

CANADIAN EARNINGS: Net operating revenues of the Canadian Pacific in July were almost 12 per cent above July last year, gross having increased by four per cent. For the seven months Canadian Pacific's gross was up seven per cent and net was greater by 20 per cent. The Canadian National's gross in July was eight per cent above last year and its net advanced to $960,000 as compared with only $87,000 last year. For the seven months the National's gross was up almost 11 per cent and its net by almost 200 per cent.



THE RESILIENCY OF THE DREADNAUGHT END HAS CONTRIBUTED MUCH IN REDUCING DAMAGE CLAIMS TO BREAKABLE FREIGHT

RAILWAY AGE

Train and Engine Employees Already Have Their Pay Increase

Train and engine service employees, with the exception of those in yard service, have already received an advance in hourly earnings over the pre-depression pay level which in many instances is far greater than the 5-cents-an-hour increase to non-operating employees put into effect on August 1. For some classes of train and engine employees the increases are as much as 16 or 18 cents an hour. Obviously, to increase further their hourly wages, as they demand, would throw their compensation out of the balance with those of other employees prevailing in 1929 which has been restored by the increase granted to non-operating employees.

Basic Wage "per Day" Greatly Understates Actual Earnings

The hourly straight time earnings of all classes of train and engine service employees for the year 1936, as compared with 1929, are shown in the accompanying table. These are not the figures the unions give out when they tell what their members are paid per hour. They use the "schedule" figure for their basic day divided by 8, which shows a comparatively modest rate per hour. But every railroader knows that train and engine service employees usually make a basic day's wages in much less than 8 hours, because their pay is based on hours worked *or mileage run,* whichever yields the more. For instance, in May, the average speed of freight trains was 16½ miles per hour. In freight service 100 miles run counts as a day. This means that the average freight train crew earned its basic day's wages in May, not in 8 hours, but in a little over 6 hours—and that fact alone makes the hourly wage of these employees 33⅓ per cent higher on the average than is shown by dividing the basic day by 8.

That the "basic day" is a misleading fiction is nowhere more clearly shown than in the number of basic days employees work a month—namely 36 to 40 or more such "days." Every railroader knows that the through freight or passenger train or engineman, while earning his 36 or more days' pay per month, actually puts in fewer hours per week than any other class of railroad employee.

The actual hourly earnings, then, with the basic day red herring removed, are shown in the accompanying table, taken from the wage statistics issued by the Interstate Commerce Commission. The increase in hourly earnings since 1929 does not, of course, indicate a corresponding increase in weekly or monthly earnings—because these employees have elected to work fewer hours. That is to say, as train speeds have increased, these employees have made their runs in shorter time, the mileage rate of pay remaining unchanged. If these employees should prefer to make more money, rather than to work their present short hours, there would be no objection from railway managements to increasing the mileages and earnings that they make monthly, because it would not increase railway expenses. But their unions will not permit this. It would mean fewer employees and fewer members of the unions paying dues. Instead, the unions demand increases in basic rates of pay, which would increase railway expenses.

How Hourly Compensation of Road Train and Engine Service Employees Exceeds Pre-Depression Levels

	Average* Straight Time Earnings Per Hour 1929	Average* Straight Time Earnings Per Hour 1936	Increase in Cents Per Hour	Increase Per Cent
Passenger Conductors	1.36	1.50	14	10.3
Asst. Passenger Conductors	1.16	1.17	1	0.9
Freight Conductors (Through)	1.01	1.17	16	15.8
Freight Conductors (Local)	.95	.98	3	3.2
Baggagemen	1.02	1.11	9	8.8
Passenger Brakemen	.98	1.10	12	12.2
Freight Brakemen (Through)	.80	.93	13	16.2
Freight Brakemen (Local)	.75	.78	3	4.0
Yard Conductors	.93	.93	..	..
Yard Brakemen	.86	.86	..	..
Passenger Engineers	1.67	1.85	18	10.8
Freight Engineers (Through)	1.23	1.39	16	13.0
Freight Engineers (Local)	1.10	1.15	5	4.5
Yard Engineers	.97	.98	1	1.0
Passenger Firemen	1.33	1.50	17	12.8
Freight Firemen (Through)	.93	1.06	13	14.0
Freight Firemen (Local)	.83	.87	4	4.8
Yard Firemen	.76	.76	..	..

* Computed from I.C.C. Wage Statistics by dividing "compensation-straight time paid for" by "service hours-straight time actually worked."

It is inconceivable that the American public—or the less-well-paid railway employees, for that matter—

would support the train service unions in their demands for a wage increase if the real facts regarding the pay they receive and the easy hours they enjoy were generally known. Railway patrons—particularly farmers and small business men—earning comparatively modest incomes and working long hours certainly would see no justice in having to pay higher freight rates in order to increase the wages of men who are far better off than they. The story is not an easy one to clarify to the lay public, but it must be done. If the real facts as to train service wages, hours and working conditions were made fully known to the public, not only would there be little or no public support for the present wage demand (since the public would have to foot the bill); but a determined public sentiment would be built up also against the train limit bill and other such "make work" legislation. Indeed, a complete public understanding of the facts might very well create a public demand for the termination of the mileage basis of pay and for the elimination of "feather-bed rules."

Use Advertising to Make Facts Known

Can anyone doubt the effect on public opinion of an advertising campaign carried on in local newspapers and farm journals which would localize this issue in language somewhat as follows:

"This railroad is proud of its employees—and believes it does well by them in return. Just as an instance, the men who run our through freight trains between A-dale and B-ville usually get through from terminal to terminal in about 5 hours. They go up one day and back the next, with time off at home about 16 hours before they make the return trip. A typical crew in this service last month spent 150 hours on duty—an average of about 33 hours a week, and their weekly pay was as follows engineer, ————; fireman, ————; conductor, ————; 2 brakeman, ———— each.

"Compared to the hours and earnings of some of our good friends in this community, we believe we are doing pretty well by our employees. Don't you?

"Or take our passenger service. The engineers and firemen on the ———— Limited, which is neither our fastest nor our slowest train, get every third day off at home. On the days they work, their job takes them only 3¼ hours. Last month one of these crews worked an average of 25 hours a week, and the engineer was paid ———— and the firemen ———— for each week's work. We expect there are doctors and lawyers and dentists—(and we *know* there are ministers and school teachers and public officials and substantial farmers) in this community who would be mighty glad to get such money.

"This railroad is not rich. We wish we were, and could afford to reduce our rates to our customers and pay our employees even more than we are now paying them. But we are poor. Our stockholders who have put up the money to build this road haven't got one cent out of their investment since 1930. (And we wonder how they will feel when we want them to invest more money to keep our property modern and up-to-date if we don't give them a little something on their investment pretty soon).

"*But the spokesmen for our highest paid employees insist that we must give them a 20 per cent increase in their wages.* So the man who gets $60 for 25 hours work a week will get $72. And the spokesmen for these same employees are working in Washington for a law (it has already passed in the Senate) to force us to shorten our trains, so we will have to run more of them and hire more highly-paid employees.

"But we just haven't got the money. If we are forced to increase the wages of these employees and if this train limit bill is passed and forces us to hire a lot more of them, we will have greatly to increase our rates. And this means that our patrons in this community who are making much less money and working much longer hours than our employees will have to foot the bill for their increased wages.

"And if we lose business to competitors because we raise our rates, we will have to reduce employment, throwing men out of work who need their jobs and their pay a great deal more than our train and engine employees need the 20 per cent increase they are demanding."

Can labor organizations lay claim to a sense of responsibility when they show no concern whatsoever for the earning power of the industry upon which they live? Even such so-called "radical" labor leaders as John L. Lewis and Sidney Hillman concede the necessity for employers to earn a reasonable profit, and in the case of their unions in coal mining and the garment trades, have endeavored to assure such earnings to employers. But our reputedly "conservative" train serv-

ice unions show no concern on this point. They are perfectly willing, on the contrary, if not even desirous, to see the railways forced into socialization.

Can labor organizations lay claim to any sense of responsibility and duty to the public when, as these organizations did, they enter a wage conference with a committee of managers armed with a strike vote enabling them to threaten railways and public with a nation-wide strike any moment they see fit? Do they show any sense of responsibility and duty to either railways or public when they simultaneously make demands for large advances in wages and for expensive legislation, and, when asked where the money to pay the bill is to come from, reply that getting it is solely the concern of railway managements—meaning, of course, that it is for the managements to find ways, whether reasonable or not, of extracting or extorting it from the public?

Management Expected to Make the Public Pay the Bill

The Railway Labor Act is being acclaimed in a large part of the press as an ideal means of settling labor disputes. The railways and fourteen labor unions are being commended for having peacefully agreed under it recently to an advance in wages of 5 cents an hour, and some newspapers are urging that the present dispute be similarly settled. Is any law a good law which will prevent strikes only if the employers make advances in wages, however unreasonable, which will either bankrupt them or force them to pass along to the public increased costs, whether reasonable or not? There is too much silly talk current about the Railway Labor Act and its results. Peace is desirable, but if the only peace available under the Railway Labor Act is the peace of the grave for private ownership, there are some persons who would prefer a first class railroad strike under the Railway Labor Act to awaken the public and press to some realization of what is really occurring on the railways.

We don't for a moment believe that union leaders truly represent the great majority of railway employees in the attitude they have taken; and we don't believe they will have a particle of public support if the true facts of the situation are ever adequately made known to the American people.

Orders Gain in August

Domestic equipment orders placed in August, totaling 39 locomotives, 1,490 freight cars and 1 passenger-train car, carry further the resurgence of buying that became evident when July purchases pulled the total for that month out of the May and June slough. Comparison with the 3 locomotives, 1,030 freight and 14 passenger-train cars ordered in July gives August, as a whole, a decided superiority over its predecessor month, with the important exception of passenger-carrying equipment. When compared with the August, 1936, record of 3 locomotives, 3,225 freight and no passenger-train cars, August, 1937, shows a decided increase in motive power orders, an equally emphatic decrease in freight car buying, and an insignificant rise in passenger-train car activity. However, the eight-month totals of 1937 to date,—270 locomotives, 47,610 freight and 471 passenger-train cars, are greatly in excess of the figures in each category for the corresponding period of the preceding year and, in the case of passenger cars, of the total for the entire 12 months of 1936.

The 39 locomotives ordered in August, all of which were placed with commercial builders, exceed the number of units ordered in any month of 1937 except January and April. They bring the total for the year thus far to 270, which is more than twice the 134 locomotives ordered in the corresponding eight months of 1936 and greater than the 12-month totals of 1931 to 1935, inclusive. In the export field an order for 1 Diesel-electric locomotive was placed during the month and inquiries have been entered by the South African Railways & Harbours for a number of motive power units.

A Single Railroad System

Chairman Carroll Miller of the Interstate Commerce Commission comes out in favor of the combination of the American railroads into a single system. He is not explicit as to the character of the ownership of this gigantic corporation, but it seems almost inevitable that the Government would have the major voice in its management, even if it does not take over the voting shares. This inevitable resulting extension of Government domination of the transportation industry is one of the most fundamental objections to the proposal.

Regardless of how desirable Mr. Miller's proposal might be, however, it seems altogether impracticable because of the powerful opposition to such proposals from organized labor. Even Mr. Eastman's modest little program for co-ordination of individual railroad facilities to eliminate clear cases of duplication and waste foundered on the rock of labor union opposition. . . .

Shippers would object to the Miller proposal for a single railway system chiefly because it would eliminate the benefits they enjoy from competition among the individual railway lines. . . .

The certain opposition of organized labor, antagonism from shippers and public opposition to the proposal based upon the fear that, sooner or later, it will make the railroads a burden on the public treasury make the proposal of Mr. Miller more a theoretical than a practical suggestion.

—From an Editorial in the New York Journal of Commerce.

This Section of Continuous-Rail Track, 6,983 Ft. Long, Is One of Many Now on the D. & H.

Rail is made continuous between insulated joints, employing electric flash and Thermit welds to produce lengths of 780 ft. or more on cars, and Thermit welds for field closures

Delaware & Hudson Installs More Welded Track

CONTINUING its experiments of recent years with continuous welded rail, the Delaware & Hudson is, during the present year, welding into continuous lengths of a mile or more, 316,800 lin. ft. of rail, which represents its entire 1937 new rail program. In this work it is employing in large measure a type of rail weld new in this country, known as the electric flash butt weld, although it has continued to make a large number of Thermit pressure welds of the type used in earlier installations, and is employing this type of weld for joining in track all of the long sections of rail produced by the flash welding process. In its present program, standard 39-ft. rails of 131-lb. section are being welded together on strings of cars into lengths 780 ft. or more, and are subsequently being pulled out on the road and unloaded, and then welded into lengths continuous between insulated joints. The entire 1937 program will involve approximately 7,200 electric flash joint welds and approximately 1,200 Thermit pressure joint welds.

Having begun its laying of long welded rails in 1933, with an installation at Albany, N. Y., involving 12,075 lin. ft. of rail and 316 Thermit welded joints, the Delaware & Hudson had, by the end of 1935, 4 installations, involving 65,007 lin. ft. of welded rails and 1,472 welded joints. The earlier of these installations were referred to in the *Railway Age* of December 29, 1934.

In all of the installations prior to 1937, the joint welds, with the exception of 70, were made by the Thermit method. The 70 welds of a different character were electric flash welds made by the General Electric Company, of a type being used to a considerable extent by several European roads. The experience derived in making these welds, combined with laboratory and service tests of the welds, led to the development of portable flash welding equipment by Sperry Rail Service, and to a contract between this company and the D. & H. for the larger part of the present program of rail welding being carried out. All of the electric flash welding which is being done under this contract includes a heat-treatment of the rail ends in an effort to relieve any abnormal stresses set up within the rail as a result of the welding, and the necessary grinding to produce the best joint conditions.

Equipment and Welding Set-Up

The equipment employed in the flash welding on the D. & H. involves essentially a welding car, housing a specially constructed flash welding machine; a generator car, housing two turbo-generators for supplying current for the flash welding operations; a steam locomotive for supplying steam to the turbo-generators; a rail-rack car for lining up and otherwise preparing the rails for movement to the welding machine; a series of five flat cars on which the stress-relieving equipment and joint grinders are located; and the requisite number of flat or open-end gondola cars for holding the long rails for subsequent movement out on the line. This equipment, as a unit, has already carried out rail welding operations at four different points on the D. & H., the long rails being distributed from these points.

The flash welding machine, housed in a steel underframe box car, is essentially a two-part unit on a structural steel bed, one part of which is rigidly fixed, while the other is a movable platten which supports the end of the rail which is to be welded to the rails already joined to form the long string of rails. Both the fixed and movable sections of the machine are equipped with hydraulic clamps for holding the rails to be joined, and with electrical contact pad clamps through which the welding current is passed into the rails.

The generator car is a specially constructed steel box car which houses the two steam turbo-generators, one of which supplies current to the welding machine, while the other supplies current for lighting and for the operation of the auxiliary motor units forming a part of the welding outfit. Steam for the operation of the turbine driving the generators is, as before mentioned, furnished by a regular road type locomotive located immediately ahead of the generator car. The steam demand of the turbine varies from 15,000 to 22,000 lb. per hr., with pressure at the turbine nozzles between 175 and 200 lb. per sq. in. The only fundamental requirement in connection with the locomotive, other than its steaming capacity, is that it be equipped with a suitable outside six-inch steam connection, extending from its steam dome to its front end, where connection can be made with the steam line of the generator car leading to the turbine. Provision must also be made to replenish the fuel and water supply of the locomotive periodically, with the least interference with the welding work.

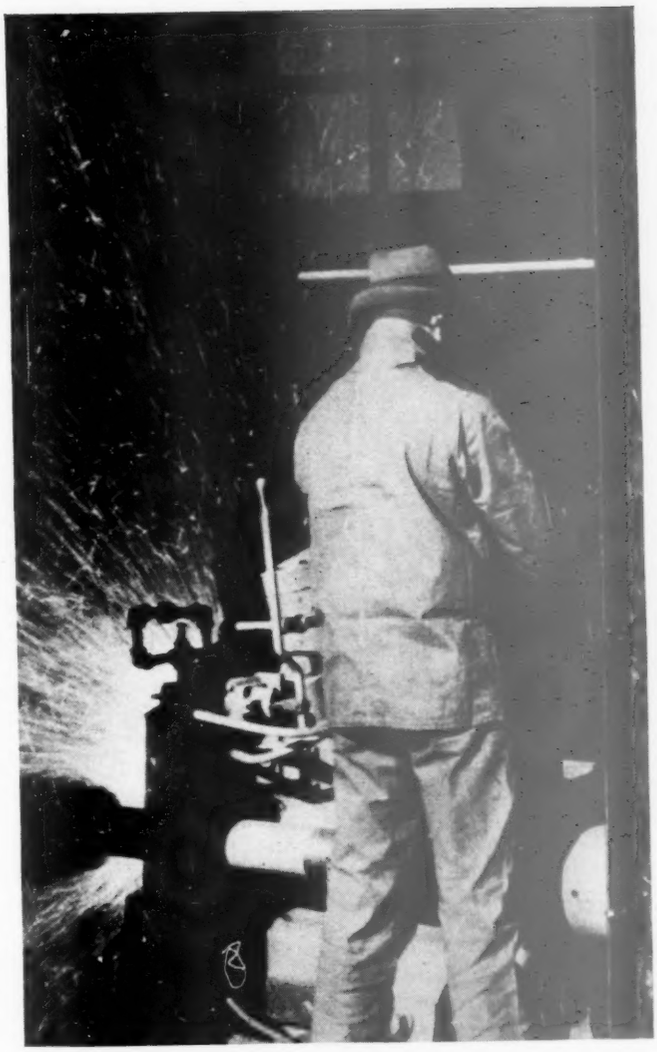
How the Welds Are Made

The making of the flash welds involves three steps—pre-heating of the rail ends to be joined, flashing, and a push-up. Arranged for welding, the rails are gripped simultaneously by the clamping devices and current contact pads in the two parts of the welding machine. In the pre-heating operation, the single rail, fixed to the movable platten, is brought up to intermittent short circuiting contact with the end of the fixed rail, which in a short time raises the temperature of the rail metal at the ends to practically a fusing heat. When this stage has been reached, the flashing operation is carried out, which involves continuous short circuiting of the welding current by bringing the rail ends into continuous contact. In this operation, the steel immediately at the rail ends changes to a molten stage and flashes out from the contact faces, removing any rough spots or oxidized metal on the rail ends.

After a predetermined amount of flashing, the rail ends are squeezed together under hydraulic pressure, causing the molten metal at the ends to fuse together, and producing an upset area around the periphery of the rail at the point of weld. Immediately following the push-up operation, the rail clamp on the movable platten of the machine is released from the rail, and, under hydraulic pressure, the platten is moved forward to a point where it shears off the upset metal on the underside of the rail base.

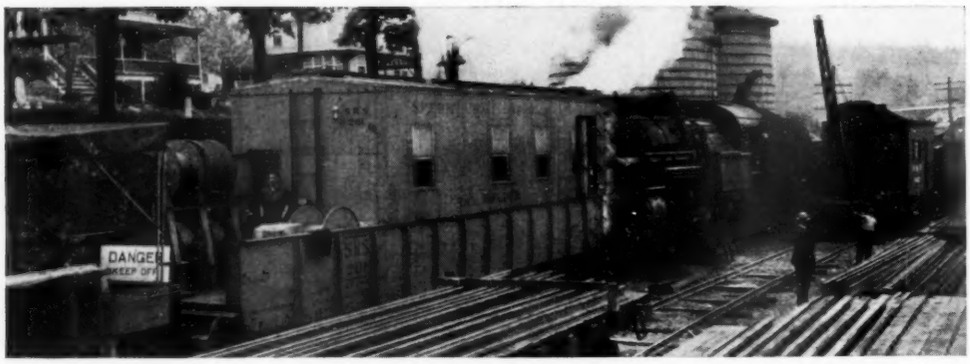
While each weld is being made, certain completion operations are carried out on the welds previously completed on the flat cars immediately adjacent to the welding car. These operations, which proceed five joints at a time, complete the conditioning of the welds for service in the track. The first of the operations is a process of stress-relieving through the weld area, while all of the following involve the grinding away of the undesirable portions of upset metal.

The stress-relieving operation, which is required because of the high heat concentration directly at the rail ends in the flash welding process, is carried out in an oil-fired heating oven, or furnace, wherein the rail immediately at the weld and for a distance of 18 to 20 in. each way from the weld is brought to a predetermined temperature, and then allowed to cool under atmospheric conditions. The temperature involved in the stress-relieving operation is controlled by means of a recording pyrometer, and was arrived at after a series of tests



The Flash, in the Process of Making an Electric Flash Butt Joint Weld

The Rail Welding Train, Looking Along the Grinding Cars Toward the Heat-Treating, Welding and Generator Cars



The Generator Car Houses Two Turbo-Generators, Which Take Steam Power from a Specially-Fitted, Road-Type Locomotive

conducted to produce a weld with the greatest endurance.

In the grinding operations following the stress-relieving operation, the upset metal about the weld is first ground off on the sides of the rail head. This is followed by the removal of the upset material from the underside of the rail head on both sides, through the fillet area, and from the top of the base flanges, and then by the rough grinding of the rail head. The final grinding operation involves the smoothing-up of the rail head through the weld area with a reciprocating-type grinder.

As the strings of rails are extended by each new weld, they are pulled forward through the welding machine the proper distance, on to the storage cars, by means of a cable and an electrically-operated haulage winch located on a flat car at the far end of the storage cars. During the early work of storing the long rails on cars for subsequent movement out on the line, as few as 2 rails were handled at a time. In later operations, 7 or 8 long rails were handled at one time, and as many as 12 of the long rails have been lined up on cars and taken out on the line without experiencing any difficulty.

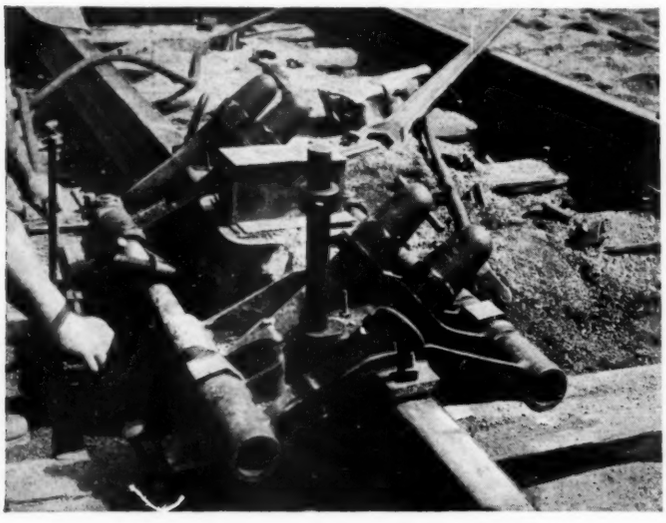
The force involved in the flash welding work includes 6 men in the employ of the Sperry Company and 10 to 12 men in the employ of the railroad. The production of the flash welding outfit during the early stages of the work varied widely, and, because of developments and changes in the design or arrangement of equipment, was far from what was first anticipated. However, with the progress of the work, production has increased to the point where, in recent weeks, from 100 to as many as 166 joints have been completed in a working day involving two eight-hour shifts.

After the welded lengths of rail have been unloaded at the site of laying, they are equipped on the ground with new tie plates and either M. & L. or compression-type spring clips, and are subsequently lined over into position in the track and temporarily joined together with standard four-hole rail joint bars, employing bolts in only the end holes. Later, all of these mechanical joints are removed in turn and the long lengths of welded rail are joined together by Thermit pressure welds, bringing about continuous rails up to a mile or more in length between insulated joints.

In the ultimate arrangement for making the closure welds between the long sections of welded rail, it is planned to make these welds by the Thermit process while the rails lie alongside the operating track, and then to line the rails into position in the track between trains. This latter method, which is known to be more effective and economical, and which can be done with much less interference by or with train operation, has been carried out to some extent in the work which has been done to the present time, and has not been used more extensively only because of the pressure of other work on the track maintenance forces, which has made it difficult to bring together the proper size force for carrying out the closure welding in advance of the program for getting the new rail into the track.

The unloading of the long rails is accomplished by pulling them off from the rear of the train and laying them down immediately outside of the running rails on the track shoulder. The lengths are then barred on to the tie ends, as necessary, workwise, ready for the application of the new tie plates and for lining into posi-

(Continued on page 310)



Making a Thermit Closure Weld in Track

The Stress-Relieving Operation is Carried Out in an Oil-Fired Oven Immediately After the Completion of Each Weld

Railway Buying Slows Up

Recovery of purchasing retarded as mounting labor and material costs move roads to put clamps on spending

A RECESSION in railway buying that is whittling down the gains that were made in the early months of 1937 and retarding its full restoration is reflected in a summary of railway purchasing which has been compiled by the *Railway Age* covering the first six months of the year. While material and equipment purchases for the period were 42 per cent larger in the aggregate than for the first half of 1936, curtailments in spending, forced on the railroads by a slackening in general business and by increasing costs of labor and materials, reduced equipment buying in the second quarter approximately $50,000,000 under the total for the first three months and appears to have caused less material, by volume, to be purchased during the second quarter this year than in the same period of 1936. Total purchases for the first six months lacked 36 per cent of equaling the corresponding purchases in 1929.

During the first six months of 1937 the railroads are estimated to have purchased equipment, materials, and fuel in the aggregate amount of $627,692,000, consisting of $368,871,000 of materials, exclusive of fuel, and $113,655,000 of new equipment ordered from manufacturers—a total business with manufacturers of $482,526,000. The remaining $145,166,000 was for fuel.

The value of orders placed with builders for new locomotives and cars was larger by approximately $30,000,000, or 35 per cent, than the value of orders placed during the first half of 1936, and was within $3,000,000 of the value of orders placed during the first six months of 1930. During the second quarter of 1937, however, they were only about $32,000,000, as compared with a total of $82,000,000 for the first quarter of 1937, a drop of approximately $50,000,000 in three months. While the equipment purchases in the first quarter of 1937 were almost five times the purchases in the first quarter of 1936, about 45 per cent less equipment was ordered in the second quarter of 1937 than was ordered in the second quarter of the previous year. The equipment total for the first six months of 1937 was less than half the corresponding total in 1929.

Expenditures made during the first six months of this year for materials, exclusive of fuel and equipment, were larger by approximately $110,000,000, or 42 per cent, than in the first half of 1936, and were larger by $96,000,000, or 30 per cent, than the corresponding expenditures in 1931. In contrast with orders placed for new equipment, the purchases of material were fairly well sustained throughout the six months. The expenditures in June totaled $65,435,000, as compared with $63,892,000 in May and $66,705,000 in April. They failed, however, to increase from month to month as much as in the previous year. While the total expenditures for ma-

Purchases of Supplies and Equipment from Manufacturers —6 Months*

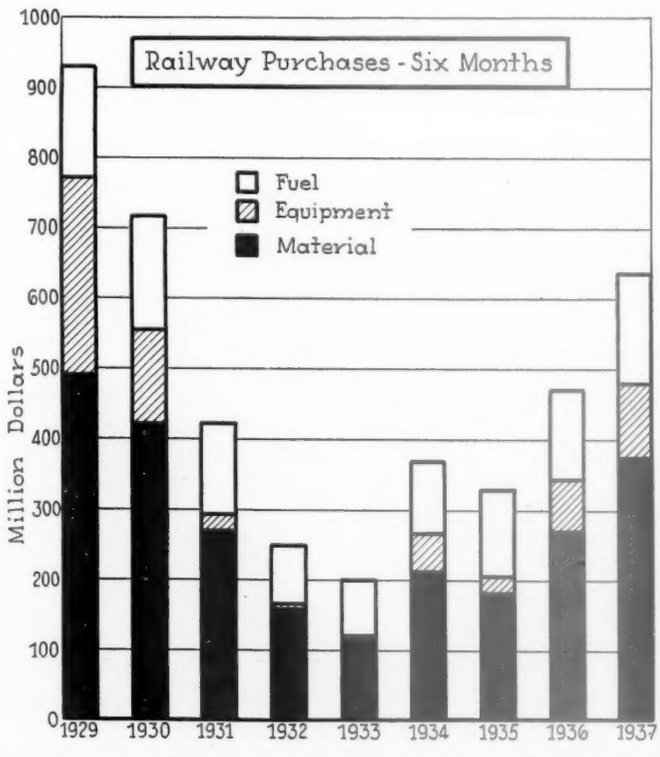
	Materials† received from manufacturers (000)	Equipment ordered from manufacturers (000)	Total from manufacturers (000)	Fuel (000)	Total including fuel (000)
1929	$487,601	$270,850	$758,451	$171,999	$930,450
1930	436,283	116,664	552,947	162,517	715,464
1931	272,859	21,794	294,653	127,141	421,794
1932	150,450	1,828	152,278	94,650	246,928
1933	113,890	3,372	117,262	84,354	201,616
1934	210,686	55,101	265,787	104,694	370,481
1935	180,750	20,962	201,712	124,800	326,512
1936	258,640	83,951	342,591	127,959	470,550
1937	368,871	113,655	482,526	145,166	627,692

* Subject to revision.
† Includes rail and forest products.

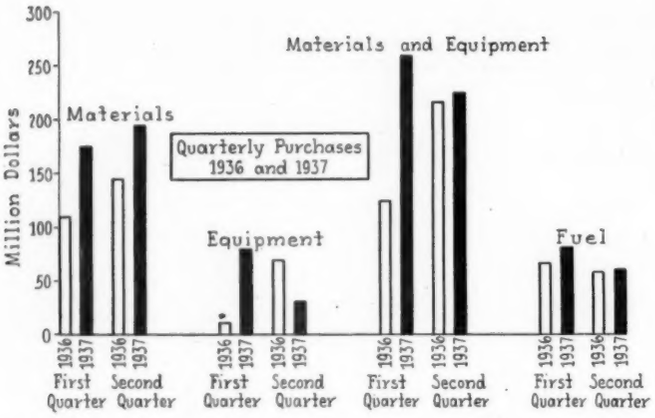
Purchases of Material, Exclusive of Equipment—6 Months*

1937	Fuel (000)	Crossties (000)	Other material (000)	Total (000)	Total less fuel (000)
January	$26,032	$3,898	$46,535	$79,620	$55,588
February	26,150	3,389	45,067	78,508	52,347
March	30,526	5,004	55,615	97,428	66,901
April	19,626	5,132	56,179	86,331	66,705
May	20,437	5,030	53,782	84,330	63,892
June	22,383	6,020	54,124	87,819	65,435
Six months ..	$145,166	$28,475	$311,304	$514,038	$368,871
1936					
January	$21,859	$3,027	$29,656	$55,649	$33,790
February	24,355	2,371	29,146	58,298	33,943
March	22,304	3,312	36,611	66,435	44,131
April	20,626	3,867	39,553	69,550	48,924
May	19,447	4,112	41,859	71,118	51,671
June	19,367	4,149	38,193	65,547	46,180
Six months ..	$127,959	$20,839	$215,019	$386,599	$258,639

* Subject to revision.



A Comparison Between the Purchases Made by the Railroads During the First Six Months of 1929 and 1937



A Comparison Between the Railway Purchases Made in the First Quarter and the Second Quarter of 1936 and 1937 Showing the Declining Rate of Buying

terials, exclusive of fuel and equipment, in the first quarter of 1937 were 56 per cent larger than in the first quarter of 1936, the purchases in the second quarter of 1937 were only 34 per cent larger than the corresponding purchases in the second quarter of 1936.

It has been estimated, moreover, that prices of materials purchased in the first quarter of this year were approximately 3½ per cent higher than during the first quarter of 1936, and 12 per cent higher in the second quarter of this year than in the second quarter of last year. This indicates that the *volume* of materials purchased in the first quarter of 1937 was 49 per cent larger than the *volume* purchased in the first quarter of 1936, while the *volume* purchased in the second quarter of 1937 was only 17 per cent larger than the *volume* purchased in the second quarter of 1936.

Quarterly Purchases Compared

		1936 (000)	1937 (000)	Increase per cent
Materials	First quarter	$111,864	$172,836	56
	Second quarter ..	146,775	196,032	34
	Six months	258,639	368,868	43
Equipment	First quarter	13,859	81,742	490
	Second quarter ..	70,092	31,913	45
	Six months	83,951	113,655	35
Materials and Equipment	First quarter	125,723	254,578	101
	Second quarter ..	216,867	227,945	5
	Six months	342,590	482,526	41
Fuel	First quarter	68,518	82,718	21
	Second quarter ..	59,440	62,446	5
	Six months	127,959	145,166	13
Total	First quarter	194,241	337,296	74
	Second quarter ..	276,307	290,392	5
	Six months	470,549	627,693	33

Dollar for dollar the expenditures for materials and supplies, exclusive of fuel and equipment, during the entire six months of 1937 fell short of the corresponding expenditures in 1930 by approximately $68,000,000, or 16 per cent, and fell short of the corresponding expenditures in 1929 by approximately 25 per cent.

There were 7 railroads out of a total of 83 whose expenditures for materials and supplies in the first six months of 1937 were smaller than in the first half of 1936.

The combined expenditures for materials and equipment, exclusive of fuel, purchased from manufacturers in the six months of 1937, totaling $482,000,000, were about $140,000,000, or 40 per cent, greater than the corresponding expenditures in 1936, and, dollar for dollar, were about $198,000,000, or 62 per cent, over the corresponding purchases in 1930. While, however, the total for the first quarter was 100 per cent larger than the corresponding total for the first quarter of 1936, the total for the second quarter was only 5 per cent larger than the total for the second quarter of 1936; and when the expenditures are adjusted for increased prices, it appears that the *volume* of materials and equipment purchased from manufacturers was 6 per cent less in the second quarter of 1937 than in the second quarter of 1936. The six months' purchases of materials and equipment, exclusive of fuel, from manufacturers, dollar for

(*Continued on page 311*)

Purchases From Manufacturers—Six Months

(Fuel and Equipment Excluded)

	1936	1937	Per cent Increase
A. C. & Y.	$144,802	$134,736	−7.0
Alton	1,542,978	1,625,463	5.3
Alton & Sou.	78,568	158,199	101.3
Ann Arbor	243,777	336,996	38.2
A. T. & S. F.	13,774,979	18,238,489	32.4
A. B. & C.	265,955	437,373	64.4
A. C. L.	2,849,360	3,730,242	30.9
B. & O.	8,925,992	15,564,626	74.3
Bang. & Aroos.	552,690	540,024	−2.3
Bing. & Gar.	109,627	126,670	15.5
B. & M.	2,131,012	3,065,077	43.8
Camb. & Ind.	51,882	70,195	35.2
Cent. of Ga.	1,268,765	1,449,803	14.2
Cent. of N. J.	1,250,512	1,750,544	40.0
Cent. Vt.	414,877	550,678	32.7
C. & W. C.	169,810	172,615	1.6
C. & E. I.	1,264,998	1,562,271	23.5
C. & I. M.	199,408	232,077	16.4
C. & N. W.	9,299,862	10,982,878	18.1
C. B. & Q.	7,221,915	13,927,670	92.8
C. G. W.	1,420,558	1,823,898	28.3
C. I. & L.	569,946	1,054,290	85.0
C. R. I. & P.	5,508,854	7,810,430	41.7
C. St. P. M. & O.	1,136,790	1,868,033	64.3
Clinchfield	423,164	543,865	28.5
Colo. & Sou.	474,589	676,079	42.4
Col. & Green.	102,309	155,748	52.2
D. & H.	1,649,444	2,438,525	47.8
D. & T. S. L.	188,563	89,923	−52.3
D. T. & I.	376,625	558,443	48.2
D. M. & N.	828,438	1,353,638	63.3
D. S. S. & A.	119,480	161,721	35.3
E. J. & E.	983,667	1,644,611	67.2
Erie	4,219,325	5,773,021	36.8
F. E. C.	403,387	618,132	53.2
Ft. S. & W.	39,745	80,582	102.7
Ft. W. & D. C.	309,515	509,129	64.4
G. N.	4,172,476	7,721,421	85.0
I. C.	6,042,146	10,392,688	72.0
K. C. S.	1,169,946	1,066,053	−8.9
K. C. Term'l	314,922	335,427	6.5
L. S. & I.	80,686	99,434	23.2
L. & N. E.	177,181	292,041	64.8
L. V.	2,504,581	3,158,882	26.1
La. & Ark.	598,915	812,885	35.7
L. & N.	5,692,686	7,362,984	29.3
Me. Cent.	809,403	1,149,794	42.0
M. St. P. & S. S. M.	1,442,749	2,005,262	38.9
Mo. & Ark.	50,637	83,911	65.7
Mo. Pac.	9,813,313	17,957,206	83.0
M. & O.	666,578	723,933	8.6
Monongahela	153,869	231,978	50.7
Montour	122,074	129,201	5.8
N. C. & St. L.	1,247,257	1,442,403	15.6
Nevada Nor.	25,781	54,348	110.8
N. Y., N. H. & H.	4,183,350	5,942,049	42.0
N. Y. O. & W.	373,070	351,436	−5.8
Nor. Pac.	5,047,965	6,024,145	19.3
Nw. Pac.	66,517	75,914	14.1
Pa.	21,565,439	38,500,364	78.5
Pa.-Read. S.S. Lines	129,325	200,581	55.1
P. & P. U.	117,634	214,977	82.7
P. & S.	27,325	100,266	266.9
P. S. & N.	43,391	54,724	26.1
Reading	1,921,146	3,693,734	92.2
R. F. & P.	509,054	838,070	64.6
Rutland	134,750	279,022	107.0
S. A. L.	3,376,550	4,652,150	37.8
St. L.-S. F.	3,891,791	5,481,136	40.8
St. L. S. W.	1,446,919	2,540,818	75.6
Southern	7,589,989	10,618,783	39.9
S. P.	7,676,311	10,403,951	35.5
S. P. & S.	592,218	522,956	−11.7
Tenn. Cent.	202,144	278,255	37.6
Term'l of St. L.	498,304	542,662	8.9
T. & N. O.	2,863,082	3,820,047	33.4
T. P.	2,215,589	2,531,807	14.3
U. P.	12,105,417	8,422,657	−30.4
Utah	55,795	125,138	124.2
Virginian	1,352,695	2,055,530	51.9
Wabash	3,027,989	5,669,434	87.2
W. Md.	1,277,821	1,892,530	48.1
W. & L. E.	1,234,773	1,950,926	58.0

Freight-Car Construction of High-Tensile Steel

A discussion of the service expectancy and outlook in the light of basic data now available concerning performance and cost of materials

By A. F. Stuebing

Railway Mechanical Engineer, United States Steel Corporation

IN its report for 1932, the A.A.R. Committee on Car Construction made a prophecy which is now being fulfilled. Commenting on the design of the steel-sheathed wood-lined box car, the Committee said: "Although no alloy steels or integrally welded constructions have been used, except for the item of welded center-sill seam described on Page 6, we believe that in the not far distant future both of these deviations from present general construction practice may be expected to provide further practical means of reducing weight." About two years after this report was presented, the first high-tensile steel especially adapted for freight-car construction was placed on the market. Since more than 16,000 cars have now been built of such materials, it seems desirable to examine the effect of their introduction on the design and construction of freight-car equipment.

It is axiomatic that the characteristics which the railroads desire in freight cars are suitability for traffic and operating conditions, combined with safety, dependability, durability and a low ratio of tare weight to load. The A.A.R. standard designs probably represent the best combination of these features for general service that engineers have been able to evolve from many years' experience with carbon and copper-bearing steel.

To appraise the freight-car situation in the light of the new steels now available, it is not necessary to speculate about radical changes. The high-tensile steels are fundamentally low-carbon open-hearth steel given improved properties by special metallurgy. Their increased strength over plain steel is not questioned. Some of these steels have demonstrated superior resistance to various types of corrosion. The definite information which is now available regarding them should enable designers and builders of freight cars to use high-tensile steels with assurance.

In a paper entitled "What Next in Car Equipment?", presented at the meeting of the Mechanical Division of the A.A.R., L. K. Sillcox said, in part: "We cannot undertake to define the materials of which cars should or will be constructed. Open-hearth mild steel has proved its merits as well as its limitations. It is realized that substitute low-alloy steels possess the properties of greater strength that are claimed for them and they have displayed superior resistance to corrosion. These are valuable qualities, available at a price—and the higher the initial car cost, the more thoroughly these features may be exploited. Were it not essential that cost should govern, truly remarkable revelations in durability, net to gross weight ratio, and relief from maintenance expense might be shown. * * * * Railway mechanical officers question the wisdom of constructing these cars, still experimental, in large numbers. There are compromises of known value which will be more readily adopted. The exact service performance of the newer materials is still imperfectly known. Factors in the economic equation are in question. Utilization figures are most disturbing. * * * *

"Slowly the complete knowledge of new materials will be acquired to the point that they will not be regarded with distrust when proposed to withstand the rigors of freight service. * * * * Of the countless details which together make up the railway car, either freight or passenger, every one is deserving of much individual, studied attention. That basic materials of construction are provoking the most interest is explained by the novelty of changing long established practices and the aggressive approach by the producers of new alloys. This is a strictly economic problem and the decision in any case does not greatly influence the essentials of railway operation."

The portion of Mr. Sillcox's paper quoted above raises questions regarding the properties of high-tensile steels, their application in freight cars, the cost and economy of equipment constructed of them, and the reasons for the keen interest in these materials, which seem to invite some comments.

Service Expectancy of High-Tensile Steels

The physical properties of high-tensile steels can be verified by a testing laboratory in a few days. Furthermore, these properties remain unchanged throughout the life of the material. With the background of experience gained from service and tests of many types and constructions of cars, and with the superior methods of determining static and dynamic stresses that are now available, engineers should be able to design high-tensile-steel equipment substantially lighter than conventional equipment for freight service, which, from the standpoint of strength, will not be looked on with distrust. It would seem that the only uncertainty regarding new high-tensile steels is that relating to their corrosion resistance under the conditions encountered in freight-car service. Here, the railroads can find almost a direct parallel and a reliable basis for forecasting the performance of the newer materials in the records of service obtained from copper steel, which has now been in use for about thirty years.

The increased service life of copper steel over plain carbon steel in freight cars is now so well established that one significant fact is likely to be overlooked—namely, that some authorities on corrosion opposed the use of

copper steel in freight-car construction even after its superior performance in atmospheric corrosion tests had been proved beyond question. Objections were offered because copper steel did not show substantially increased corrosion resistance when exposed to the corroding agents which are present in high-sulphur coal. Doubts concerning the durability of copper steel in freight cars were dispelled by experience in actual service and authorities now agree that this steel, which develops two

Table I—Partial List of Freight Cars in Which High Tensile Steels Have Been Used

Car owner	No.	Type	Parts of high-tensile steel	Date
B. & L. E.	3,600	Hopper	Body structure	1935–1936
B. & L. E.	500	Gondola	Body structure	1936
C. & N. W.	500	Hopper 70-T	Body sheets and plates	1937
C. B. & Q.	500	Composite gondola	Center sill cover plates, bolsters, cross bearers and ties, ends, etc.	1935
C. B. & Q.	500	Hopper	Body sheets and plates	1937
C. M. St. P. & P.	500	Auto box 40 ft. 6 in.	Body structure	1936
C. M. St. P. & P.	500	Auto box 50 ft. 6 in.	Body structure	1936
C. M. St. P. & P.	500	Auto box 50 ft. 6 in.	Body structure	1937
D. M. & N.	200	Ore	Body structure	1936
E. J. & E.	850	Gondola	Body structure	1936
E. J. & E.	200	Hopper	Body structure	1936
P. F. E.	4,700	Refrigerator	Center sills, sheets at hatches	1936
U. P.	1,900	Box	Body structure	1937
U. P.	700	Auto	Body structure	1937
Utah Copper	250	Gondola	Body structure	1936

to three times the corrosion resistance of plain steel in the atmosphere, has a normal service life at least one and one-half times that of plain steel when used in coal-carrying equipment.

The relation between Cor-Ten, which may be taken as an example of the new high tensile corrosion resisting steels, and copper steel corresponds closely to that which existed between copper steel and plain steel twenty or more years ago. Tests have demonstrated that the corrosion resistance of Cor-Ten in a variety of atmospheres is four to six times that of plain steel, or two to three times that of copper steel. Other experiments indicate that Cor-Ten has better resistance than copper steel to a wide variety of corrosive agents, as tests in city water, mine water, salt water and salt spray have shown. The longer life obtained from copper steel over plain steel indicates clearly that resistance to atmospheric corrosion, though not a direct index of added life, is most significant and the best criterion we have of the added service life that will be obtained. Even if there were no verifying evidence from service tests, now of several years' duration, it would be reasonable to conclude that the relative life of Cor-Ten in freight-car service will bear the same relation to the life of copper steel that the life of copper steel bears to that of plain steel.

The results of atmospheric corrosion tests indicate that, under the conditions usually existing in hopper and gondola cars, the life of Cor-Ten sheets will be at least one and one-half times the life of copper-steel sheets, or two and one-quarter times the life of plain steel sheets, provided equal section is used in all cases; or, the life of Cor-Ten will be equal to the life of copper steel if the thickness of Cor-Ten is one-third less. This estimate of relative life is conservative because it disregards other superior properties. Cor-Ten has increased resistance to abrasion and to denting and puncturing, whereas, in these respects, copper steel is no better than plain carbon steel.

Experience So Far Is Reassuring

It is, of course, true that high-tensile steels have not been used in freight cars long enough to determine accurately what life will be obtained from them in any particular service. However, the experience with some of the first cars built of such materials is reassuring. Hopper cars constructed with Cor-Ten side sheets $^{3}/_{32}$ in. thick, a reduction of 50 per cent have been in severe service for more than two years. Even though such reduction is extreme and not in the ratio suggested above, careful examination does not disclose that these parts may require renewal sooner than conventional material of standard thickness in the same service. Box cars have been in regular operation for an equal period with $^{1}/_{32}$-in. side sheets, only 30 per cent of the standard thickness, and these, likewise, promise to give satisfactory service. Neither of these types of light-weight freight cars has shown excessive or objectionable deflection.

There is a natural tendency to think of weight as synonymous with strength and serviceability. This is not correct, even when comparisons are restricted to the same material. The A.A.R. center sill is an excellent illustration of this fact. In a report of static and dynamic vertical load and end impact tests of three designs of box cars, the Committee on Car Construction showed that the stresses in the A.A.R. center sill, with 21.3 sq. in. of cross-sectional area, were lower than those developed in either of the other two center sills with which the new design was compared, even though the areas of the older types were 25.58 sq. in. in one case and 28.44 sq. in. in the other.

The experience that has already been gained from light-weight freight cars built of high-tensile steel indicates how such equipment should be designed to utilize the strength of these materials most effectively. It goes without saying that they should not be used indiscriminately by scaling down sections but only in suitable applications and proper designs. If they are applied judiciously, high-tensile steels should be more economical than plain steels, because the ratio of increased strength and increased resistance to corrosion which they provide as compared to plain steel is greater than the increase in cost. Again this comparison does not take into account the other superior properties, such as abrasion resistance, previously mentioned.

It is our understanding that when Mr. Sillcox referred to the remarkable developments that might be shown in durability, net to gross weight ratio, and relief from maintenance expense, were it not essential that cost should govern, he had reference to the stainless group of steels and to the light alloys. We understand also that he had the high tensile group in mind when speaking of "compromises of known value which will be more readily adopted." The officers of some railroads, at least, do not regard hign-tensile steel freight cars as being still in the experimental stage. This is indicated by the fact that they have installed such equipment in substantial quantities. Some of the detailed evidence on this point is listed in Table I, which shows also what parts of the cars were constructed of high-tensile steel.

Some of the references to special materials in Mr. Sillcox's paper might be construed to mean that the high tensile steels are not open-hearth steels. All such mate-

rials generally offered for freight car construction are produced satisfactorily in open-hearth furnaces.

The high-tensile steels most extensively used in freight-car construction are mild steels, used in the as-rolled condition, and have characteristics more similar to ordinary structural steel than to any other material. They are especially suited for application in place of mild steel and provide the advantages of the more costly alloy steels without requiring heat treatment to develop the most desirable physical properties.

Table II—Comparison of Cost and Weight of Steel for A. A. R. Standard Cars and M.A.C. Light Weight Cars at Prices effective March 5, 1937

	Copper-bearing steel for A.A.R. Std. Car			Cor-Ten steel for M.A.C. lt.-wt. car		
	Price	Wt.	Cost	Price	Wt.	Cost
Cost of Steel for Box Cars						
Underframe	$2.35	7,399	$173.88	$3.55	5,445	$193.29
Superstructure shapes	2.33	3,278	77.03	3.55	2,074	73.63
Superstructure sheets	2.55	6,993	178.32	4.00	5,107	204.28
Spring plank	2.35	434	10.20	3.70	290	10.73
Brake steel	2.55	367	9.35	3.50	229	8.59
Brake forgings	4.40	322	14.17	6.00	221	13.26
Total	....	18,793	$462.95	....	13,366	$503.80
Add 10 per cent to cost of material	....	.....	46.29	....	.....	50.38
			509.24			$554.18
Weight reduction	....	.....	.....	....	5,427	.....
Increased cost	....	.....	.....	....	.....	44.94
Cost of complete car	....	....	2,792.33	....	.....	2,837.27
						+1.6%
Cost of Steel for 50-Ton Hopper Cars						
Underframe	$2.35	5,620	$136.77	$3.55	4,216	$149.67
Side sills	2.35	680	15.98	3.55	464	16.47
Side top flanges	2.35	863	20.28	3.55	654	23.21
Corner posts	2.35	201	4.72	3.55	137	4.86
Side post extensions	2.35	150	3.53	3.55	116	4.12
Ladder stiles	2.55	48	1.22	4.10	29	1.19
End construction, less end sheet	2.35	664	15.60	3.55	511	18.14
Door spreaders	2.35	195	4.58	3.55	130	4.62
Floor supports	2.35	335	7.87	3.55	224	7.95
Side sheets and posts	2.55	3,303	84.23	4.05	2,202	89.18
	2.35	1,062	24.96	3.55	786	27.90
End sheets	2.55	397	10.12	4.05	263	10.73
Hopper and floor sheets	2.35	4,964	116.65	3.90	3,683	143.64
Doors	2.35	393	9.24	3.90	295	11.50
Door frames	2.35	379	8.91	3.55	283	10.05
Spring planks	2.35	434	10.20	3.70	290	10.73
Brake steel	2.55	337	8.59	3.75	224	8.40
Brake forgings	4.40	322	14.17	6.00	221	13.26
Total	....	20,547	$497.71	....	14,730	$555.62
Add 10 per cent to cost of material	....	.....	49.77	....	.....	55.56
			$547.48			$611.18
Weight reduction	....	.....	.....	....	5,817	.....
Increased cost	....	.....	.....	....	.....	63.70
Cost of additional length of car and weight	....	.....	.....	....	−414	22.02
Weight reduction and increased cost	....	.....	.....	....	5,403	$85.72
Cost of Steel for 70-Ton Hopper Cars						
Underframes	$2.35	7,239	$170.12	$3.55	5,100	$181.05
Side sills	2.35	838	19.69	3.55	572	20.31
Side top flanges	2.35	1,064	25.00	3.55	806	28.61
Corner posts	2.35	201	4.72	3.55	137	4.86
Side post extensions	2.35	214	5.03	3.55	165	5.86
Ladder stiles	2.55	48	1.22	4.10	29	1.19
End construction, less end sheet	2.35	664	15.60	3.55	511	18.14
Door spreaders	2.35	291	6.83	3.55	195	6.92
Floor supports	2.35	379	8.91	3.55	252	8.95
Side sheets and posts	2.55	4,200	107.10	4.05	2,800	113.40
	2.35	1,129	26.53	3.55	847	30.07
End sheets	2.55	397	10.11	4.05	265	10.73
Hopper floor sheets	2.35	6,317	148.45	3.90	4,697	183.18
Doors	2.35	590	13.78	3.90	442	17.23
Door frames	2.35	569	13.37	3.55	425	15.09
Spring planks	2.35	557	13.09	3.70	370	13.69
Brake steel	2.55	353	9.00	3.75	235	8.81
Brake forgings	4.40	322	14.17	6.00	221	13.26
Total	....	25,372	$612.72	....	18,069	$681.36
Add 10 per cent to cost of material	....	.....	61.27	....	.....	68.14
	....	.....	$673.99	....	.....	$749.50
Weight reduction	....	.....	.....	....	7,303	.....
Increased cost	....	.....	.....	....	.....	75.51
Cost of additional length of car and weight	....	.....	.....	....	−480	25.55
Weight reduction and increased cost	....	.....	.....	....	6,823	$101.06

The Cost of Weight Reduction

The cost of high-tensile-steel freight cars, as compared with similar equipment of plain steel, depends largely on the amount of weight reduction. Some recent designs, exemplifying moderate weight reduction, can be obtained at no increase over the price of conventional equipment. The light-weight cars designed by the Mechanical Advisory Committee appointed by the Federal Coordinator of Transportation are representative of conservative practice. At present prices, if Cor-Ten is used for all the rolled-steel parts, the increased cost of this material over the copper steel required for the corresponding A. A. R. standard car is as follows:

Box car	$45
50-Ton hopper car	85
70-Ton hopper car	101

Details of weights and costs for both materials are shown in Table II. It will be noted that the increase in cost is largest for hopper cars. However, the Cor-

(*Continued on page 311*)

Miller Favors One Big Railroad

I.C.C. chairman believes unified system would simplify rates, reduce waste — Suggests trainload rates

CHAIRMAN Carroll Miller of the Interstate Commerce Commission, addressing the annual meeting of the National Association of Railroad and Utilities Commissioners in Salt Lake City on Tuesday of this week,* suggested consolidation of the railroads into one national system as the "logical solution" of railroad difficulties. Such a system, he said, "should result in a simple rate structure, no differently rated territories, uniform tariff classification, transportation wastes reduced to a minimum, and many other manifest benefits."

He also expressed interest in "how much thought has been given by the railroads to making trainload rates." Chairman Miller, who made it clear that he was expressing only his own views and not those of the Commission, spoke in part as follows:

"During the greater part of my professional life, I have had to do with rates and rate making, mostly in connection with public utilities and especially with manufactured and natural gas. Utility rate making is a simple job compared with that for railroads, one of the principal reasons being that substantially every utility is a monopoly. The regulation of a monopoly is decidedly different from regulating a competitive industry. A utility often has competition but none from a utility of its own kind, as is the case with the railroads. However, I think it is safe to say that every well-managed utility *operating* company is able to make a fair profit.

Easier to Assure Utilities a Fair Return

"The rates of the utilities are mostly based on costs which can be determined with accuracy after the values of the properties are ascertained. As present day reproduction values of the properties are demanded in most cases, it becomes necessary to spend large sums of money and much time in making successive appraisals, which is a burden on the commissions, corporations and the public. It seems to me that appraisals, after they are once made, should be kept up to date much in the same manner as our Bureau of Valuation now keeps the railroad values current. This procedure would probably save much money, and certainly much time, for both the corporations and the rate-making bodies involved. The equitable rate-making base appears to be the correct book value (original cost).

"When an individual makes an investment in the stock of a public service corporation, he should be warranted in expecting a fair return on his money, and not on an appraised value at any particular date which may result in a percentage of return either considerably higher or lower than at the time he invested, depending upon values at the date of the appraisal. The use of book value as a base would greatly simplify the work of fixing a rate, tend to stability in rate making, and save large expenditures of time and money.

"As I have said, it appears to be simple enough to make rates for a monopoly, but in the case of railroads where competition is so keen between the individual roads as well as, in later years, with other forms of transportation, the problem is indeed a very complicated one.

"We, in federal and state regulatory work, recognize our obligations to encourage and preserve the inherent advantages of, and foster sound economic conditions in, all transportation agencies under our jurisdiction. Our responsibilities to that end are, in my opinion, the maintenance of a modern, comprehensive national transportation system adapted to the needs of our commerce as well as our national defense, and the proper guidance of each agency comprising our national transportation system to assure the continuance of each in its proper sphere.

Favors Rates Based on Costs

"While it is apparent that all transportation rates should be based primarily on cost of operation, there are certain other factors to be taken into consideration. However, because of the competition between the various transportation agencies, I believe we should apply the same principles to all in determining the reasonableness of their rates. It is only in this way that each agency will know its economic field of operation and be able to concentrate in developing and improving its efficiency within its own limitation and, with proper co-ordination, combine to give us the strong national transportation system we need.

"Rates are often fixed by making comparisons with existing rates. When such a process is followed, the history of the latter must be taken into consideration. Otherwise, errors may continue to pile up until finally some rates thus arrived at may be entirely too low or too high. It is well to check them with the costs of operation, when there is any doubt. In prescribing just and reasonable rates, fares, or charges for railway transportation, the Interstate Commerce Commission has in the past found it extremely difficult to consider the cost of providing the transportation, as one of the important factors in rate making.

"The railway business is so complex that only a small portion of the expenses can be charged directly against any particular service, and most of the so-called 'common expenses' are incurred for the joint benefit of several services. Hundreds of cost exhibits have been submitted to the Commission by carriers and shippers but the methods of assignment and apportionment of the common expenses have varied widely, and the unfortunate result has been that such cost figures could not be accepted with confidence and often have been almost wholly disregarded in the decisions reached by the Commission.

Necessity for Cost Finding Increases

"Railway carriers have heretofore opposed the introduction of cost accounting methods believing that such detailed records would be very expensive to maintain and of little value while the costs of their competitors were unknown and the rates charged by them were not subject to Commission regulation. With the passage

* A report of further proceedings at this meeting will be published in next week's Railway Age.

of the Motor Carrier Act of 1935 the need for reasonably accurate cost data on both railway and highway services has become imperative and there has been a marked increase in the number of cases before the Commission where either one or both classes of carriers attempt to analyze their costs.

"The Commission's Bureau of Statistics is gathering from every known source suggestions for improvement in the methods used in analyzing railway expenses, the objective being to obtain cost data sufficiently accurate to warrant confidence in the results, without burdening the carriers with unnecessary accounting. Several important steps have been taken during the past two years to utilize the best suggestions.

"The first step was the improvement of rules for separating freight and passenger expenses which had been effective since January 1, 1920, but these rules were objectionable in many respects. Representatives of the Association of American Railways and the Interstate Commerce Commission sat down together with a determination to find the best answers to each problem and mutually satisfactory agreements were reached on each disputed point. The revised rules were made effective January 1, 1936. All of those who participated in the conferences expect that further improvements in the rules will be made from time to time as our knowledge of the factors influencing costs increases. A second step was the revision of annual and monthly report forms used by railways in their reports to the Commission, to provide better segregations of certain expenses and more statistical information as to carrier operations.

"Another step now under way is the preparation of rules which will enable the carriers or the Commission to localize expenses if and when necessary by providing for the assignment and apportionment of railway *system* freight expenses between *accounting divisions* and the further separation of such expenses between those chargeable to road, yard, water transfer, station, special services, general overhead, and taxes. The proposed rules are now being discussed by representatives of the railways and the Commission's staff.

"Similar rules for analyzing the expenses of highway carriers are now under consideration. They will provide for the assignment and apportionment of system freight expenses between types of highway vehicles, stations, overhead expenses, and taxes, and the further separation of vehicle expense between routes.

"In some cases the Commission may find it desirable to submit to both railway and highway carriers a form of standard questionnaire, for expense analyses. Two such cases are now before the Commission—Docket 27565, Petroleum Products from California to Arizona, and Docket 27571, Naval Stores from Mississippi to Gulf Ports. The Commission's Bureau of Statistics has been assigned the task of gathering and summarizing the cost data, and its problem is to obtain an analysis of the expenses of each type of service sufficiently accurate to warrant the confidence of carrier and commission officers with a minimum disturbance to carrier accounting routines and a minimum cost for carrier preparation of the necessary exhibits.

"Scientific" Rates Must Be Introduced Slowly

"To carry on its cost studies the Commission has added to its staff several experts who have had many years of practical transportation experience in managerial, operating and accounting fields. The carriers have indicated a willingness to cooperate in the work and it seems apparent that we are on the threshhold of a new advance in the art of rate making.

"We often hear of scientific rate making. Since I am more or less of a scientist, naturally I would prefer such procedure but when it is considered how rates have been made in the past, the economics and commercial conditions of the whole country would be upset if such a method were suddenly adopted. Perhaps, as rates based largely on costs are adopted, the rate structure will gradually approach the scientific.

"In recent years, the consideration of whether or not an individual railroad was earning more than a fair return on its investment has seldom been necessary. But when and if such a question should arise, we would be faced with the factor of competition between the railroads. If we ordered the railroad having excess earnings to reduce its rates, the chances are that it would get more traffic, and probably earn more money, at the expense of its competitors and their shippers. As an example of what has happened and may happen again with competitive rail carriers, there are some companies that have invested earnings in their properties, over and above a fair return on the money originally invested, to such an extent that large proportions, if not the entire properties, now represent excess earnings, a part or all of the original investments having been returned to the stockholders in the form of dividends.

Another great difficulty in making rail rates is in fixing those to apply between differently rated territories. The constant controversy in this connection between the Southern and Official Territories is a fair example. Many shippers of the South contend there is a rate barrier between them and the northern markets. The southern roads often make proposals to establish rates for the entire haul on the basis of rates within official territory but the official lines generally refuse to concur no doubt primarily because of the divisions demanded by the southern lines. Perhaps the divisions question should be considered by the Commission when such rates are proposed although that issue is seldom presented by the parties when the cases are brought to us. A report recently issued by the Tennessee Valley Authority makes rate proposals that might result in a rate barrier between the North and South and other territories, against the North.

Consolidation Into a Single System

"In presenting testimony in Ex Parte 115, the railroads considered their properties as a whole in so far as investment and percentage of profits were concerned. I am making no criticism of this procedure but it at once suggests the idea of one railroad system. If all the railroads were operated by one corporation, it is apparent that value for rate making purposes should be placed only on used and useful property. Various proposals have been written on ways and means of combining the railroads into one or a limited number of systems. If none of these proposals is satisfactory, I am confident that a fair plan can be worked out to have all the rail carriers operated as one system, if there becomes sufficient public interest in and demand for such procedure.

"The logical solution of the railroad difficulties seems to be one national railroad system. Such a system should result in a simple rate structure, no differently rated territories, uniform tariff classification, transportation wastes reduced to a minimum, and many other manifest benefits. By whatever equitable means one national railroad system might be accomplished, the security owners generally should ultimately be in a better position than under present competitive and complicated conditions.

"The rail carriers contend that other agencies of transportation are subsidized. Regardless of the merit of this contention, we must deal with expenses as we find them when basing rates on costs. The ceiling of rates that a carrier can expect to receive for its service will be the cost to the shipper of the service by his own trucks or by contract carriers. In this connection, I wonder how much thought has been given by the railroads to making train-load rates.

"Comparatively little consideration has been given to the question of what is inherently an appropriate and reasonable basis for motor carrier rates that will be fair to the general public and assure the growth of the industry. Within the ranks of the motor carrier industry there seem to be two schools of thought on the subject of rate making, those carriers that are content to use railroad rates as a measuring stick, and those that are making an effort to establish their rates based on the cost of operation.

Regulation Reduced Motor Rates

"While the majority of states now have motor carrier regulations, few have undertaken to prescribe motor carrier rates. It is significant, however, that since the passage of the Motor Carrier Act, 1935, those few states that have prescribed motor carrier rates, have, after exhaustive studies and research, based their findings on the cost of operation. The first result in compelling motor carriers to publish and file their rates was a lowering of the general level of such rates. Competitors were given definite advice of the rates being charged and this resulted in driving them to the lowest levels. Faced with rising operating costs the motor carriers became greatly concerned, and the past few months has seen a decided improvement in the adjustment of these rates due to the carriers' willingness to sit in round table conferences to consider the subject.

"We are yet to receive a formal protest from a shipper in this field to the effect that the level of rates was unreasonably high and this, in my opinion, is an indication that it is not the tendency of motor carriers to establish their rates on an unreasonably high level. The rail carriers continue to reduce their rates to meet 'motor truck competition,' and it is likely that we shall be called upon to intervene in the competitive warfare between railroads and motor carriers.

"I believe that most of the members of this Association have had little to do with air transport and, assuming that you are not familiar with our duties recently acquired under the Air Mail Act, I shall describe some of them briefly. My observation is that the fixing of air-mail rates is one of our most difficult problems. Among the principal reasons being the rapid progress and development of the air transport industry, with the consequence that rates fixed today may not be proper tomorrow. However, we are required to review the rates each year and, therefore, if a rate becomes improper, it will be promptly corrected.

The Question of Air Mail Rates

"Our jurisdiction embraces the fixing of fair and reasonable rates to be paid by the government for the transportation of mail by airplane but does not extend to control over rates for the transportation of passengers and property. The Act requires us to make an annual review of such rates including the audit of the books, accounts, and entire business records of the carriers, examination and scrutiny of their purchases and rents to determine their reasonableness, and an investigation into the relationship of stockholders and employees of the carriers to their vendors to see that none is unduly benefited—all for the purpose of ascertaining whether any carrier earned an unreasonable profit. We are required to report the results of these rate reviews to the Postmaster General and to both Houses of Congress. Limited authority is also given us to authorize extensions of non-mail services of air-mail carriers where we find they do not compete in any way with the existing service on an air-mail route, and to pass upon complaints of unfair practices of ail-mail carriers. We are directed to require from the carriers under our jurisdiction semi-annual reports of all free transportation granted by them.

"A rather unique feature of the rate-making provisions of the Air Mail Act of 1934 is the limitations placed upon our power to fix air-mail rates. We may not prescribe rates which exceed certain specified amounts in cents per airplane mile, and we are required to determine rates so that the aggregate compensation payable thereunder shall, after July 1, 1938, fall within the anticipated postal revenue from air mail. The question of how the aggregate compensation so ascertained shall be apportioned among the individual carriers is left to our determination, as is also the method or methods to be used in estimating the revenue from air mail. The latter duty is especially complicated due to the use by the public of both regular and air-mail stamps on letters and packages transported by airplanes and the great number of post offices through which such mail passes.

Transport Plant Overexpanded

"If jurisdiction over the granting of certificates of convenience and necessity had been given the Commission in 1887 when the Act to Regulate Commerce was passed, instead of at the late date of 1920, I am confident that the condition of the rail carriers would be better than it is today. I venture to say that, unless such jurisdiction over air carriers is promptly given to some governmental agency, that industry will find itself over-extended in the near future. There is no doubt that the general transportation facilities existing at the present time are much more than required to handle the available traffic. The conditions are more pronounced in some parts of the country than in others."

Delaware & Hudson Installs More Welded Track

(*Continued from page 302*)

tion in the track. During the rail renewal operations, the two outside bolt holes are drilled in the rails and the bars are applied, forming the temporary connection until the Thermit closure weld can be made.

Thermit Closure Welds

Making the Thermit closure welds in track involves much the same procedure as making standard Thermit pressure rail joint welds, except that an insert section of metal is used between the facing rail heads and upper parts of the webs. This insert brings about in part the pressure necessary between the rail heads for producing an effective pressure weld, and, at the same time, provides an opening between the adjacent rail bases and lower sections of the web for producing the Thermit part of the weld. To make a closure weld of this character requires approximately three hours time, which

means that these welds must be made during periods of light traffic, or that traffic must be detoured around the work. Most of the closure welding has been done between trains, and, to permit of the greatest progress, a number of welds have been completed at the same time by independent Thermit welding gangs. As a result,

The Long Rails Unload Themselves as the Train is Pulled From Beneath Them

as many as five or six closure welds have been made at one time during intervals between traffic movements.

Where the closure welds are made before the rail is lined into the track, the welding operations are fundamentally the same as those involved when the rail is in the track, using the insert method, the primary requisite being the proper facing and spacing of the rail ends, and the provision of enough compression in the rails to permit of $\frac{5}{32}$-in. to $\frac{3}{16}$-in. pull-up in effecting the pressure weld in the head area. If the rails have been unloaded carefully, a minimum of adjustment is usually necessary to bring the facing ends into proper position for welding.

If there is an appreciable gap between rail ends, and if for any reason it is not desirable to adjust the rails longitudinally to the proper position, a short length of rail can be welded into the gap, making two Thermit welds. Where this procedure is resorted to, the first of the welds is made by the usual Thermit pressure weld process, without an insert, while the second weld is made as a closure weld, with an insert, as already described. Following rough dressing-up of the welds, the long rail lengths are then lined into the track in rail renewal operations, and the final grinding of the head area is done with a reciprocating-type grinder.

All of the rail welding on the D. & H. has been carried out under the immediate direction of H. S. Clarke, engineer maintenance of way.

Railway Buying Slows Up

(*Continued from page 304*)

dollar, were short of the six months' total in 1929 by approximately $279,000,000, or 36 per cent.

Fuel purchased in the six months totaled approximately $145,166,000, compared with $127,959,000 in the same period in 1936. Expenditures for crossties totaled $28,475,000, compared with $20,839,000 in the first half of 1936.

Purchases in June, unadjusted for differences in material costs, totaled $22,383,000 for fuel this year, as compared with $19,367,000 last year; $6,020,000 for ties, as compared with $4,149,000 last year; and $54,124,000 for miscellaneous materials, as compared with $38,193,000 last year.

Freight-Car Construction of High-Tensile Steel

(*Continued from page 307*)

Ten cars can carry more pay load, due to their lower tare weight; consequently, on the fairer basis, namely that of cost per ton of capacity, the Cor-Ten equipment costs no more than standard cars of copper steel. These cost comparisons are based on prices at the mill plus 10 per cent for stores and handling expense. The actual difference in the delivered cost would be less, because freight charges on the plain steel would be more than on the high-tensile steel.

It has been pointed out before that the superior corrosion resistance of Cor-Ten can be utilized either to reduce maintenance costs and to lengthen the life of the car structure, or to effect a reduction in weight and add to pay-load capacity, as economy and service requirements may dictate. The final design will depend, in each case, on the relative importance which the designer assigns to increased strength and longer life on the one hand, and to lighter weight and increased carrying capacity on the other. Even though conditions vary widely between different types of equipment and under different conditions of climate and service, the relative life of Cor-Ten and copper steel should approximate the estimate given above and, with that as a basis, the sections used can be chosen for increased life and reduced maintenance cost or for life equal to that of existing equipment with reduction in dead weight and consequent savings in operating expenses.

When the economics of different designs of freight cars are being considered, all the pertinent factors require investigation in order to determine the most economical balance between first cost, maintenance and operating cost, for the particular conditions under which the equipment will operate. Data available from the statistics of Class I railroads as a whole will serve to give the average results of such an analysis, although the figures are not necessarily representative for any individual railroad. Estimates prepared by various authorities indicate generally that the cost of hauling the tare weight of cars in freight service is about three times the amount spent for freight-car repairs. It seems, therefore, that, taking the railroads as a whole, the greatest savings made possible by the use of high-tensile steels would probably be obtained by decreasing operating costs through the reduction of dead weight. It has been pointed out that the adoption of these materials adds little now to the cost per car and usually does not increase the cost per ton of capacity. Therefore, even moderate savings in maintenance or transportation costs will justify the use of light-weight equipment built of high-tensile corrosion-resisting steel.

The railroads have been trying for years to reduce the weight of freight cars, and have recognized the savings in transportation costs resulting from weight reduction. Nevertheless, now that materials are available which make lighter cars practical, some roads seem reluctant to build high-tensile steel freight equipment unless they are certain that immediate, direct savings on their own lines will insure a substantial net saving from such equipment. It should be recognized that, as high-tensile steel cars come into more general use, each road will receive approximately as many such cars as it sends off its line. The operating savings from light weight equipment will then result in mutual benefits. The decisions of the railroads regarding the type of equipment they purchase should be governed by the fact that their operations involve general interchange of freight and they will only be able to achieve the operating economies that light-

weight equipment will produce by adopting policies that will put large numbers of such cars into use in interchange. The railroads cannot avail themselves of the full economic possibilities of the high-tensile steel development if they strive solely to obtain maximum savings while cars are on the home road. In the end, it will be profitable for all the railroads to build cars to obtain the maximum savings, whether they are effected in maintenance or in operation, and irrespective of the proportion of mileage the cars make on the owning road.

Substantial progress has been made toward uniformity of construction in freight cars, as shown by the fact that over 91 per cent of the house type and hopper cars ordered from April 1, 1936, to June 9, 1937, were of A. A. R. standard design or conformed closely thereto. The advantages thus gained should not be abandoned with the introduction of high-tensile steel cars. The next logical step appears to be the formulation of recommended practice as an aid to railroads that desire to build light-weight equipment. Such designs should be based on an analysis of the economics of weight reduction for the railroads as a whole.

Mr. Sillcox says: "Of the countless details which together make up the railway car, either freight or passenger, every one is deserving of much individual, studied attention. That basic materials of construction are provoking the most interest is explained by the novelty of changing long established practices and the aggressive approach by the producers of new alloys." The situation may be appraised in different ways. Surely the mere novelty of changing long established practices was not the incentive that caused 24 railroads to use high-tensile steel in over 16,000 freight cars. The producers may have approached the introduction of these new materials aggressively, but it is altogether possible that the economic benefits to be derived from their use have prompted the railroads to apply them.

In the foregoing we have endeavored to clarify certain statements that seemed obscure and to explain some points regarding the new types of steel on which there might be slight misunderstanding. The aim has been to avoid statements based only on opinions, because the high-tensile steel development has now progressed in time and scope to the stage where it is thought that almost any questions concerning it can be answered on the basis of data now available.

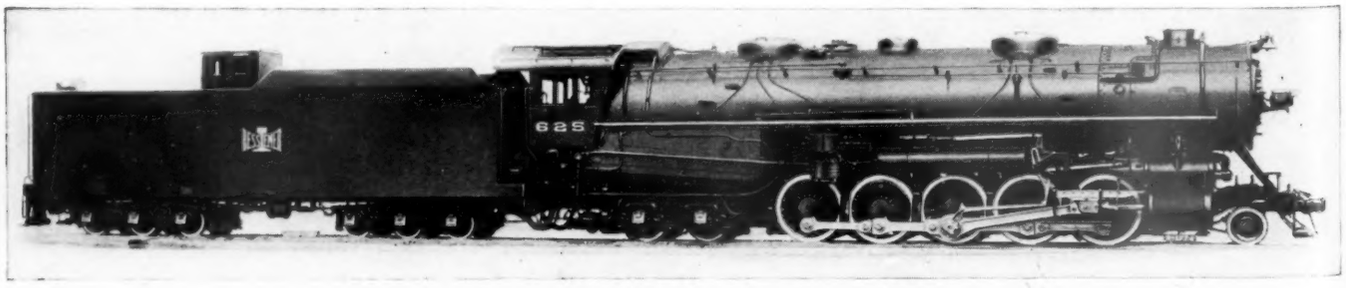
B. & L. E. Receives Ten 2-10-4 Locomotives

THE Bessemer & Lake Erie received ten 2-10-4 type locomotives from the American Locomotive Company during the early part of the present summer. These locomotives are closely similar to a number of others of the same type which the railroad has purchased at various times since 1929. They have practically the same total weight and combined tractive force as the last preceding order which was delivered by the Baldwin Locomotive Works in 1936. Few departures from well-established practice have been made in the construction of these locomotives. One of the outstanding features, however, is the use of flame-cut frames of rolled steel furnished by the Carnegie-Illinois Steel Corporation.

These locomotives have large boilers with an inside diameter of 90 in. at the first ring. The firebox includes a combustion chamber which extends forward into the barrel of the boiler 49½ in. and is fitted with two Thermic syphons and three arch tubes. The locomotives have Firebar grates which are fed by the Standard Type B stoker, with the stoker engine in the tender. The boiler includes a Type E superheater, the header of which includes the American multiple throttle. The boiler feed equipment includes the Elesco exhaust-steam injector. The boiler is fitted with the Barco low-water alarm. Tubes and flues are 21 ft. 6 in. long.

General Dimensions and Weights of the Bessemer & Lake Erie 2-10-4 Type Locomotives

Railroad	B. & L. E.
Builder	American Locomotive Co.
Type of locomotive	2-10-4
Road class	H-1-D
Road numbers	621-630
Date built	June, 1937
Service	Freight
Rated tractive force, engine, 81 per cent, m.e.p. lb.	97,300
Rated tractive force, with booster, lb.	110,400
Weights in working order, lb.:	
On drivers	369,100
On front truck	38,300
On trailing truck	112,600
Total engine	520,000
Tender	377,200
Wheel bases, ft. and in.:	
Driving	22-4
Engine total	45-6
Engine and tender total	95-2½
Driving wheels, diameter, outside tires, in.	64
Cylinders, number, diameter and stroke, in.	2-31x32
Valve gear, type	Walschaert
Valves, piston type, size, in.	15
Boiler:	
Steam pressure, lb.	250
Diameter, first ring, inside, in.	90
Firebox length, in.	150 1/16
Firebox width, in.	102¼
Combustion chamber length, in.	49½
Arch tubes, number and diameter, in.	3
Thermic syphons, number	2
Tubes, number and diameter, in.	222-3½
Flues, number and diameter, in.	78-2¼
Length over tube sheets, ft. and in.	21-6
Fuel	Soft coal
Stoker	Standard Type B
Grate area, sq. ft.	106.6
Heating surfaces, sq. ft.:	
Firebox and comb. chamber	414
Arch tubes	32
Syphons	116
Firebox, total	562
Tubes and flues	5,338
Evaporative, total	5,900
Superheating	2,396
Combined evap. and superheat.	8,296
Tender:	
Style	12-wheel
Water capacity, gal.	23,000
Fuel capacity, tons	26
Trucks	6-wheel



Bessemer & Lake Erie 2-10-4 Locomotive Built by American Locomotive Company

The locomotives have a driving-wheel base of 22 ft. 4 in.; this is also the rigid wheel base. The journals are fitted with crown bearings and grease-packed cellars. With the exception of the main wheels, the driving-wheel centers are of the spoke type. The main-wheel centers are Baldwin disc type.

The radial engine truck and four-wheel trailer truck are both the General Steel Castings type. The engine truck is fitted with Dieter full-floating journal bearings. The crossheads are of alloy cast steel operating in multi-bearing guides. The driving axles, main crankpins, main and side rods are of manganese-vanadium steel.

The locomotives are fitted with 15-in. piston valves operated by Walschaert valve gear and controlled by a Franklin Type E power reverse gear. The brakes are Westinghouse No. 8 ET with two 8½-in. cross-compound air compressors.

The tender frame is built up of channel sections. On it is mounted a rectangular tank carrying 23,000 gallons of water and 26 tons of coal. The tender trucks are of the Buckeye six-wheel type.

The principal dimensions and weights are given in the table.

Resort to Mediation in Wage Controversy

DEVELOPMENTS in the campaign of the Big Five train and engine service brotherhoods to obtain a 20 per cent increase in pay for their members entered a new phase on Saturday, August 28, when conferences in an attempt to settle the dispute by mediation were begun at Chicago under the direction of Dr. William M. Leiserson, a member of the National Mediation Board. Intervention in the controversy by the National Mediation Board came suddenly after the collapse of negotiations at Chicago between the Carriers Conference Committee and representatives of the unions, during which the railroads took the position that they were unable to grant any part of the 20 per cent increase requested.

On Wednesday, August 25, following by a few hours the breakdown of the wage negotiations, the threat of a strike entered the picture for the first time when the unions issued a statement at Chicago saying that they "were left no alternative other than to set the day and hour for the men to withdraw from the service," citing as their authority the results of a strike ballot which was taken previous to the negotiations. Incidentally, this is the first time in the history of national negotiations between the railroads and their employees that representatives of the latter have entered the conferences with an affirmative strike ballot to back up their demands. With matters thus rapidly approaching a crisis, the National Mediation Board, having been advised by both sides of the failure of the negotiations, proffered its services, which were immediately accepted by both parties.

In his attempt to settle the controversy by mediation Dr. Leiserson has met separately behind closed doors with the five chief officers of the unions and with the Carriers Conference Committee in an attempt to reach a settlement without imposing authority of any kind. If these efforts fail, the next legal step would be an attempt on the part of the National Mediation Board to get the parties to agree to arbitration under the terms of the Railway Labor Act. If a strike should be called at any time the Mediation Board must declare the existence of an emergency and refer the matter to the President, who may then appoint a fact-finding board to investigate the dispute and render a report within thirty days.

The collapse of the wage negotiations came after 11 days of conferences between union and carrier representatives, during which each side presented pertinent argument and evidence. Details of these presentations were not made known until after the breakdown of the negotiations and, therefore, too late to be included in last week's issue. Attending the meetings were 14 members of the Carriers Conference Committee, under the chairmanship of H. A. Enochs, chief of personnel of the Pennsylvania, between 275 and 300 general chairmen of the unions, and the chief officers of the five brotherhoods, namely, Alvaney Johnston, grand chief engineer of the Brotherhood of Locomotive Engineers; D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen; J. A. Phillips, president of the Order of Railway Conductors; A. F. Whitney, president of the Brotherhood of Railroad Trainmen, and T. C. Cashen, president of the Switchmen's Union of North America. Represented by these conferees were 86 railroads and about 250,000 train and engine service employees.

The Carriers Conference Committee, in addition to Mr. Enochs, is composed of the following: H. D. Barber, assistant to vice-president, Erie; R. W. Brown, vice-president, Reading-Jersey Central Lines; J. W. Smith, vice-president, Boston & Maine; J. G. Walber, vice-president, New York Central Lines; J. H. Aydelott, general manager lines east, Chicago, Burlington & Quincy; E. J. Connors, assistant to executive vice-president, Union Pacific; H. E. Stevens, vice-president, Northern Pacific; F. L. Thompson, vice-president, Illinois Central; G. E. Bruch, assistant general manager, Norfolk & Western; J. B. Parrish, assistant vice-president, Chesapeake & Ohio; R. C. Parsons, assistant vice-president, Louisville & Nashville; H. D. Pollard, receiver, Central of Georgia, and L. B. McDonald, general manager, Southern Pacific Lines (in Texas and Louisiana.) C. D. Mackay, assistant vice-president of the Southern, is also a member of the committee, but was prevented by illness from attending either the wage negotiations or the mediation proceedings.

During the negotiations, which began on August 11, the arguments of each of the brotherhoods in support of their request for increased wages were presented individually by their chief officers, each of whom was answered by Mr. Enochs, who acted as spokesman for the carrier group. While the arguments of each of the union representatives dealt specifically with the particular problems of the class of employees involved, the theme was essentially the same in all cases. The employee representatives emphasized the increases which have occurred in the cost of living since 1932 and sought in part to justify the increase in pay on this basis. They contended also that their members were entitled to a so-called "cultural" wage, which was defined as one permitting the purchase of such items as automobiles and the giving of college educations to their children.

Another argument voiced by the union representatives was that the productivity of their members is now greater than ever before and that, as a consequence, they are entitled to a greater share of the earnings of the industry. As further justification for the pay increase, they pointed to the recent increases in pay which have been given to employees of other industries, and also to the fact that railroad employees, as a group, have not received increases since 1929. They argued also

that the rates of pay of railroad employees do not compare favorably with those in other industries, and contended that annual compensation per worker of $2,053 is essential for a living wage and that $2,255 is necessary to provide essential luxuries.

Changing conditions of employment were also cited by the union representatives as factors which justify increased pay for their members. The duties of train and engine service employees, they contended, are now more exacting than ever before, particularly on high-speed passenger and freight trains. Other factors cited were the hazard of operation, especially in yards, and the strain and fatigue imposed by the more exacting duties. Another point mentioned was the slow rate of promotion among train and engine service employees. Formerly, said the union representatives, the positions of brakemen and firemen were in the nature of apprenticeships, but now they are permanent jobs with little possibility of advancement. The representatives of the carriers were told also that it is the responsibility of industry to maintain the purchasing power of labor by making increases in pay where possible. Finally, the unions told the carriers that they were not responsible for the financial condition of the railroads.

In support of the refusal to agree to the union's demand for a 20 per cent pay increase, Mr. Enochs presented figures to refute the arguments of the union representatives and to show that their members already constitute a favored class of employees. The union representatives were told that the rates of pay of their members are now in excess of those established by decision No. 2 of the Railway Labor Board in 1920, which placed rates of pay for railroad employees at an all-time high, and that subsequent revisions have had the effect of increasing the spread between the pay of the train and engine service groups and other classes of employees. Figures were cited to show that the average straight-time compensation paid per hour actually worked reached an all-time high for trainmen and enginemen (including switch tenders and hostlers) during the first four months of this year, being 100.9 cents per hour as compared with 94.6 cents per hour in 1929.

Continuing this phase of the argument, Mr. Enochs presented figures, based on reports of the Interstate Commerce Commission, showing that the average compensation per employee for 1936 was $2,812 for conductors, with road freight conductors (local and way freight) receiving an average of $3,221; $1,977 for trainmen, with assistant road passenger conductors and ticket collectors receiving an average of $2,364; $3,067 for engineers, with road freight engineers and motormen (local and way freight) receiving an average of $3,713; and $2,094 for firemen, with road freight firemen and helpers (also local and way freight) receiving an average of $2,549. For all trainmen and enginemen, including switch tenders and hostlers, the average compensation per employee last year was $2,343.

In answer to the contention of the employees that a raise in pay is justified because of the increased cost of living, Mr. Enochs presented figures to show that because of the decrease which has taken place in the cost of living since 1929, the purchasing power of the weekly wages of train and engine service employees, on the average, was 12.8 per cent greater during the first four months of 1937 than it was in 1929.

Throughout the negotiations the carriers committee contended also that the railroads could not absorb the increase in expenses of $116,000,000 annually that would result from the 20 per cent pay increase. In support of this argument, figures were cited showing what would have happened to the earnings in 1936 of the 86 carriers represented by the conference committee if the 5-cent-an-hour increase to non-operating employees and a 20 per cent increase in pay to operating employees had been in effect. These figures reveal that, whereas the railroads in the Eastern group enjoyed a net income of $71,497,149 last year, they would have suffered a deficit of $8,641,772 if these wage increases had been in effect. On the Western lines the effect would have been even more drastic, for, whereas these lines had a deficit last year of $8,245,796, they would have had a deficit of $94,079,104 if it had been necessary to pay the higher compensation to employees. As for the Southern lines the actual net income of $95,236,192 would have been reduced to $66,168,776. For all the carriers represented the actual net income of $158,487,545 in 1936 would have been converted into a deficit of $36,552,100.

Mr. Enochs also cited increased competition and its effect on revenues as another reason why wage increases at this time are not justified. He also called the attention of the union representatives to the fact that the earnings of certain classes of train service employees have been increased automatically without the expenditure of additional effort on the part of the recipients by the increased weights on locomotive drivers and the higher speeds of trains. The increased productivity of employees in general, which the unions cited as justification for increases in pay, has been brought about, he said, by the expenditure of large sums by the railroads for improvements, while, as a consequence of these improvements, the physical effort required on the part of employees is less now than formerly.

The employees were also told that they were making it difficult for the railroads to pay increased compensation by fostering "class" legislation, such as federal and state full-crew and train-limit bills, which, if enacted, will increase the expenses of the carriers substantially. Finally, the union representatives were told that the "saturation point" had been reached and that the railroads were unable to absorb any increase in compensation to the train and engine service employees.

By Wednesday, August 25, at noon, it had become clear that the conferees were in complete disagreement and that nothing could be accomplished by a continuance of the meetings, and they were, therefore, terminated.

* * *

Price Desk in the Santa Fe's Purchasing Office

NEWS

C.&O. Acquisition Is Recommended

Examiner urges commission to approve direct control of Nickel Plate and Erie

Holding that the proposed transaction would "be in harmony with and in furtherance of the commission's plan for the consolidation of railway properties, and will promote the public interest," Ralph R. Molster, an examiner of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it approve the acquisition by the Chesapeake & Ohio of control of the New York, Chicago & St. Louis and the Erie by purchase of the stock of these two companies. Examiner Molster would condition the authorization for the merger upon an acceptance by the C. & O. of any finding that the commission may make regarding the acquisition of short-lines assigned to System No. 6.

The Chesapeake & Ohio applied on February 4, for authority under section 5(4) of the Interstate Commerce Act, to acquire control through acquisition of capital stock of the Nickel Plate and the Erie. A hearing was held during the summer at which there was an intervention made upon the part of Elmer Nafziger, receiver of the Chicago, Springfield & St. Louis and George E. Warren and Harry A. Miskimin, as a protective committee representing the Springfield's bonds. The Springfield, a short line operating in Southern Illinois, contended that in the merger of the three roads it should first be acquired by the C. & O. as a condition precedent to the consolidation. During the hearing the receiver for the road testified that the inclusion of the line in system No. 6 (the C. & O. system) would result in annual savings of approximately $27,610 in overhead expenses and $12,500 spent to maintain off-line agencies.

The C. & O. moved for a dismissal of the interventions upon the grounds that the Springfield's line does not connect or have direct traffic relationship with any line immediately involved in the present proposals, that the record does not indicate that preservation of the line is required by public convenience and necessity, and that the record raises a serious question as to whether, if the line is to be preserved, it properly belongs in system No. 6. The examiner goes on to point out that the latter contention is not a proper one for consideration in this case.

"The fact," says the examiner, "that a line of railroad is allocated in the consolidation plan to one or more of the systems alone does not establish public need for its permanent preservation. Nor does the record in this proceeding warrant a condition of the kind sought by the Springfield interveners."

In the application to the commission the C. & O. stated that it proposed to take over from the Virginia Transportation Corporation, a wholly-owned subsidiary, 25,100 shares of Nickel Plate common stock, 151,405 shares of Erie first preferred, 60,195 shares of Erie second preferred, and 769,800 shares of Erie common; and, from the Alleghany Corporation, 167,300 shares of Nickel Plate common and 215,000 shares of Erie common. Taken together these interests would amount to 57.02 per cent of the Nickel Plate and 55.68 per cent of the Erie securities having full voting power. The end result of the transaction would simply be to eliminate one of the holding companies in the Van Sweringen "empire," the Virginia Transportation Corporation, which was formed as a "convenience" corporation for the purpose of holding the C. & O.'s interests in the Erie and the Pere Marquette.

25 Fusion-Welded Cars To Be Built by duPont

The Interstate Commerce Commission has authorized the E. I. duPont deNemours & Co. to construct for experimental service in the transportation of anhydrous ammonia 25 tank-car tanks fabricated by the fusion-welding process.

Pullman Porters Get Pay Boost

As the result of an agreement signed last week by the Pullman Company and the Brotherhood of Sleeping Car Porters, 8,000 Pullman porters will receive a wage increase of $12 a month. The signing of the agreement terminated negotiations which started in April.

N. Y. Fans to Visit Maybrook

On Sunday, September 12, the New York, New Haven & Hartford will run a special train from Grand Central terminal, New York, to the shops of the Lehigh & Hudson River at Warwick, N. Y., and return, via Danbury, Conn., and the Hudson River bridge at Poughkeepsie, N. Y., providing for stop-overs at Warwick and at the New Haven-Lehigh & Hudson River yards at Maybrook, N. Y. Railroad Enthusiasts, Inc., Railroad Magazine, and the Railway & Locomotive Historical Society, New York chapter, are the sponsors.

R. R. Ferry Set-up Largest in World

A.A.R. surveys this phase of operations "that seldom appears in spotlight"

"With virtually the same regularity of performance that marks their other services, the railroads of this country are today operating the most extensive car ferry systems in the world," says a recent statement from the Association of American Railroads. This, the statement adds, is a phase of railway operations that seldom appears in the spotlight, "yet it is an important link in the rail transportation chain."

More than 2,000 pieces of floating equipment, including steamers, tug boats, car floats, barges, lighters and miscellaneous units, are owned by the railroads which employ a sizeable army of marine workers, who "can handle a hawser or sing a chantey with the best of ocean-going sailor men." Car ferries are operated by the railroads, for the most part for the transfer of freight cars, although there are a number of places where they are still used in passenger service. In almost any harbor of any importance in the country, on the Great Lakes, along the Atlantic, Gulf and Pacific Coast, as well as on some of the larger rivers in the interior, car ferries are to be found. They range from "the rather unpicturesque blunt-nosed car floats which are lashed to powerful little tugs and carry only a limited number of cars, to the large and specially designed trim-like craft which can stow a fair length train at one time." Millions of tons of freight are moved annually by means of these adjuncts to rail service.

The most important and extensive car ferry service in operation in this country is that on the Great Lakes. While most navigation on those lakes closes for the winter, the floating services maintained and operated by the railroads in avoiding circuitous routes and busy car transfer points carry on as usual throughout the year. From the standpoint of lines involved, steamers and routes operated, character of traffic handled and deep water operation, with its storms and ice conditions, the Lake Michigan service constitutes the largest car ferry system in the world. Six railroads operate nine routes across the lake, serving ten ports or terminals. The shortest route, across the Straits of Mackinac, is about 10 miles, while the others range from 65

(*Continued on page 321*)

Seven Months Net A 2.73% Return

$357,899,351 compares with $299,738,774 or 2.3 per cent in 1936

Class I railroads in the first seven months of 1937 had a net railway operating income of $357,899,351 which was at the annual rate of return of 2.73 per cent on their property investment, according to the Bureau of Railway Economics, Association of American Railroads. In the first seven months of 1936, their net was $299,738,774 or 2.3 per cent, and in the first seven months of 1930 it was $450,935,427 or 3.48 per cent.

Gross operating revenues for the first seven months of 1937 totaled $2,452,418,669 compared with $2,222,251,053 for the same period in 1936, and $3,111,900,121 for the same period in 1930, an increase of 10.4 per cent in 1937 above 1936, but 21.2 per cent below 1930. Operating expenses amounted to $1,825,538,587 compared with $1,669,401,494 for the same period in 1936, and $2,378,147,109 in 1930—9.4 per cent greater than the former, but 23.2 per cent below 1930.

Class I Railroads—United States

	Month of July		
	1937	1936	1930
Total operating revenues	$365,148,234	$349,670,911	$451,786,925
Total operating expenses	266,640,598	248,317,687	327,955,974
Taxes	26,819,229	27,944,754	30,949,817
Net railway operating income	60,527,576	61,722,346	81,470,731
Operating ratio—per cent	73.02	71.01	72.59
Rate of return on property investment—per cent	2.62	2.68	3.55
	Seven Months Ended July 31		
	1937	1936	1930
Total operating revenues	$2,452,418,669	$2,222,251,053	$3,111,900,121
Total operating expenses	1,825,538,587	1,669,401,494	2,378,147,109
Taxes	192,942,392	176,820,602	208,450,360
Net railway operating income	357,899,351	299,738,774	450,935,427
Operating ratio—per cent	74.44	75.12	76.42
Rate of return on property investment—per cent	2.73	2.30	3.48

Class I roads in the seven months paid $192,942,392 in taxes compared with $176,820,602 in the same period in 1936, and $208,450,360 in the same period in 1930. For July alone the tax bill amounted to $26,819,229, a decrease of $1,125,525 or 4.0 per cent below July, 1936. The decrease for July was due to adjustments by some carriers crediting their tax accounts with payroll taxes set up in 1936 under the Railroad Retirement Act of 1935.

Nineteen Class I roads failed to earn expenses and taxes in the first seven months of 1937, of which seven were in the Eastern district, two in the Southern district, and ten in the Western district.

For July alone net railway operating income was $60,527,576, which, for that month, was at the annual rate of return of 2.62 per cent; in July, 1936, the net was $61,722,346 or 2.68 per cent on investment, and in July, 1930, was $81,470,731 or 3.55 per cent. Gross for July amounted to $365,148,234 compared with $349,670,911 in July, 1936, and $451,786,925 in July, 1930; operating expenses totaled $266,640,598 compared with $248,317,687 in the same month in 1936, and $327,955,974 in July, 1930.

Class I roads in the Eastern district for the first seven months had a net railway operating income of $210,962,008, which was at the rate of 3.19 per cent. For the same period in 1936, their net income was $193,866,200 or 2.95 per cent on their property investment, while in 1930 it was $254,169,877 or 3.99 per cent on their property investment. Gross in the Eastern district for the first seven months totaled $1,237,803,516, an increase of 9.1 per cent compared with 1937, but a decrease of 20.9 per cent compared with 1930. Operating expenses totaled $885,693,244, an increase of 8.7 per cent above 1936, but a decrease of 24.7 per cent under 1930. Net in the Eastern district for July was $28,990,312 compared with $32,528,258 in July, 1936, and $38,379,153 in July, 1930.

In the Southern district net for the first seven months was $46,857,548, or 2.63 per cent as compared with $38,485,128, or 2.17 per cent in 1936, and $48,370,223, or 2.61 per cent in 1930. Gross in the Southern district for the first seven months amounted to $309,189,996, an increase of 10.4 per cent compared with the same period in 1936, but a decrease of 21.0 per cent under 1930. Operating expenses totaled $230,111,843, an increase of 8.0 per cent above 1936, but a decrease of 25.9 per cent under 1930. In the Southern district for July the net was $4,790,372 compared with $6,118,158 in July, 1936, and $5,429,199 in July, 1930.

Class I roads in the Western district for the first seven months had a net of $100,079,795, which was at the rate of 2.13 per cent; for the same seven months in 1936, they reported a net of $67,387,446, or 1.44 per cent, and for the same period in 1930 a net of $148,395,327 or 3.12 per cent. Gross in the Western district for the seven months' period amounted to $905,425,157, an increase of 12.1 per cent above 1936, but a decrease of 21.6 per cent under 1930. Operating expenses totaled $709,733,500, an increase of 10.7 per cent compared with 1936, but a decrease of 20.4 per cent under 1930. For July alone, railroads in the Western district reported a net of $26,746,892 compared with $23,075,930 for July, 1936, and $37,662,379 in July, 1930.

Railroads in Colorado Ordered to Pay Sales Tax

Under a ruling of Homer F. Bedford, treasurer of the state of Colorado, the railroads in that state are no longer exempt from payment of the sales tax. Under the previous encumbent in this position, Charles M. Armstrong, the railroads were not required to pay the tax.

Greyhound to Get N.H. Bus Routes

Former would trade its stock for long-distance lines of N. E. T.

Long-distance bus routes of the New England Transportation Company, highway subsidiary of the New York, New Haven & Hartford, will be consolidated with parallel services of the New England Greyhound Lines, in which the railroad affiliate will acquire a stock interest, if the Interstate Commerce Commission grants applications filed this week by New England Greyhound. Under the proposed arrangement the N. E. T., which was a pioneer among highway subsidiaries of the railways, would remain in the bus field only as an operator of local routes. Intensive competition among various carriers for passenger traffic and the adverse effect on buses of the two-cents-per-mile railroad coach rate are given as reasons for the proposed merger which, it is hoped, "will bolster the weakened financial condition" of the companies involved.

Three applications were filed—one dealing with the acquisition, and the other two with financial arrangements. Consummation of the transaction would give the N. E. T. 10,000 shares or one-half of New England Greyhound's 20,000 shares of common stock; the other half would be held by the Greyhound Corporation which would also be the owner of New England Greyhound's outstanding 4,640 shares of non-voting preferred.

Routes of the New Haven affiliates involved include all of the long-distance services of the N. E. T. and its two subsidiaries—Victoria Coach Line, Inc., and Berkshire Motor Coach Lines. Specifically, the agreement between the railroad subsidiary and the Greyhound affiliate, which is a part of the application, describe the lines to be merged as those constituting the entire operations of Greyhound and its affiliates within the area bounded by New York City, Pittsfield, Mass., Springfield, Boston, Long Island Sound and the Atlantic Ocean, except the Albany, N. Y.-Boston, Mass., line of the Central Greyhound Lines (a New York Central affiliate). N. E. T. lines to be merged constitute the entire operations of it and its affiliates "in through operation between New York and Pittsfield, Springfield and Boston."

The agreement stipulates, however, that N. E. T. "may continue to operate a comprehensive local motor bus service within the area described." Where through routes parallel such local routes, New England Greyhound will handle through passengers only; but N. E. T. agrees not to consolidate these local lines so as to compete with New England Greyhound, and not to short-haul the latter. The agreement will not alter the present charter services of either company. Greyhound further agrees to co-ordinate its transportation system with that of N. E. T. and the New Haven, and to use the facilities, personnel and services of those two

companies "in every feasible way." Also, New England Greyhound will undertake so-called "guaranteed operations" at the behest of New Haven trustees, provided it is guaranteed a net profit of two cents per bus mile on such required services. The contract was signed for New England Greyhound by R. E. Maxwell, vice-president, and for N. E. T. by President H. S. Palmer, also trustee of the New Haven; C. E. Smith, vice-president of the New Haven and president of the Victoria Coach Line and the Berkshire Motor Coach Lines, signed for those two N. E. T. affiliates.

The acquisition application sets forth that the proposed transaction will be consistent with the public interest because it will permit a more frequent, convenient and better integrated service on the routes involved. Schedules will be staggered, better station facilities will be provided and there will be a more efficient distribution of equipment. New England Greyhound will be enabled to offer "a first class transportation service under the adverse conditions brought about by the reduction of railroad coach fares to two cents per passenger mile." Figures are included to show that the lines involved earned $304,968 in 1935, but lost $19,570 in 1936 and $17,741 in the first six months of 1937. The railroad fare cut was cited as the major cause of the drop in revenues and net earnings after 1935.

The application goes on in the latter connection to call attention to New England's congested and winding highways which make the New York-Boston running time of buses approximately 60 per cent longer than train time, thus rendering it "more difficult to compete against low rail fares in this territory than elsewhere." The situation, it adds, is further aggrevated by severe competitive conditions—a total of 75 scheduled trips are operated daily by common carriers each way between New York and Boston. These include 22 train schedules, 40 bus services, 11 airplane schedules and one boat-bus route. Another of the latter, the Fall River Line (a New Haven affiliate), it is recalled, "recently gave up the competitive struggle." Of the 40 daily New York-Boston bus schedules, the N. E. T. and Greyhound have been operating 23.

Reduced passenger revenues, it is next contended, are not sufficient to support the services of both companies on a paying basis; and the proposed merger is submitted "as the most effective means of adjusting the service to meet existing conditions."

In addition to the 10,000 shares of stock which it proposes to issue to N. E. T., New England Greyhound will assume liability for $56,391.38 of N. E. T. equipment obligations. In the latter connection it will acquire 33 buses with a net book value of $149,850.67; other tangible assets to be acquired bring the net book value of property (including the buses) thus proposed to be transferred to $170,266.33. Routes to be transferred have been appraised on the basis of their earning power and the savings which the merger is expected to bring.

Of the two accompanying applications dealing with the financing of the proposed transaction, one seeks authority for New England Greyhound to assume liability for the $56,391.38 of N. E. T. equipment obligations mentioned above and for $204,000 of equipment mortgage notes of the Greyhound Corporation. The latter cover 17 new buses acquired for Greyhound's New England operations before routes in that territory were segregated into New England Greyhound, which was incorporated in Connecticut on May 28. In the other finance application New England Greyhound seeks authority to issue the 10,000 shares of its common stock to N. E. T., and 9,000 shares of common and 1,000 shares of preferred to Greyhound Corporation, the latter in repayment of indebtedness.

The issuance of this stock would give N. E. T. and Greyhound Corporation equal holdings of New England Greyhound common. The latter when organized in May issued only 1,000 shares of common, all of which is held by Greyhound Corporation. The stated value of each no-par share is $23.65418, which would give N. E. T.'s 10,000 shares a stated value of $236,541.80.

Fan Meeting

The National Railway Historical Society, Philadelphia chapter, which regularly meets on the first Thursday of each month in the Broad Street Suburban station of the Pennsylvania, Philadelphia, Pa., will, due to the Labor Day week-end, hold its next meeting on September 9, dedicated as "Baltimore & Ohio night."

Agency Extends Air Service

The Railway Express Agency, Inc., through its own air express division, took over the business of the General Air Express division of the Transcontinental Western Air, Inc., on September 1. As successor to the discontinued air line express affiliate, the agency will enlarge its air express field through the established services of the Transcontinental organization.

Chicago Traffic Group Rides "Rocket" to Rock Island

On August 31, 130 members of the Traffic Club of Chicago chartered one of the Chicago, Rock Island & Pacific's new Diesel-powered streamline "Rockets," for a trip to Rock Island, Ill., where they visited the Rock Island Arsenal and played golf on the Arsenal golf course. Luncheon was served on the train and dinner at the Arsenal.

Transit Rate on Grain Denied by Western Carriers

The Western Trunk Line committee last week denied the request of certain western grain markets for the establishment of transit privileges on grain shipments between various markets. The request was based on a recently issued permissive order of the Interstate Commerce Commission, which gives the railroads the right to establish transit privileges if they so desire. In a letter to the petitioners denying their request, J. A. Farmar, chairman of the Western Trunk Line committee, said: "The carriers, after careful study, believe that such action will result in a serious diminuation of their revenues. In this period of advancing costs of operation and in view of the generally unsatisfactory earnings of the carriers generally in the Western district, it is their belief that the conservation of their revenues in order to preserve an adequate system of transportation in the interests of American agriculture and industry constitutes a most grave obligation on their part." The markets which joined to ask the transit privileges were Omaha, Neb., Memphis, Tenn., Leavenworth, Kan., and Atchison and St. Joseph, Mo., St. Louis and Kansas City.

Pacific Northwest Advisory Board to Meet on September 29

The next meeting of the Pacific Northwest Advisory Board will be held at Spokane, Wash., on September 29. Acting on the suggestion of Dean W. A. Schoenfield, Oregon State college, chairman of the agricultural council of the board, invitation to membership has been extended to the secretary of each production credit association of the Pacific northwest. It is estimated there are more than 200 such associations.

"Roomette" to Be Tested on Twentieth Century

The new type of Pullman sleeping car known as the "roomette" entered a two-week test period on the New York Central on August 27, when one of them was placed in operation on the Twentieth Century Limited. It is expected that a number of cars of this type will be placed in service on the New York-Chicago run of this company next year. There will be no increase in charges for the "roomette" over the present rate for a single-occupancy standard Pullman section.

New Jersey Would Reopen New York Harbor Lighterage Cases

The state of New Jersey has filed with the Interstate Commerce Commission a petition seeking a reopening and a rehearing of the New York harbor lighterage cases which were decided contrary to contentions of New Jersey interests in July, 1934. The position of New Jersey in these cases is that railroads serving the New York district should not be permitted to absorb the cost of New York harbor lighterage services in the line-haul rates, thereby equalizing the latter throughout the port area.

B. A. R. Places New Cars on "Aroostook Flyer"

The use of ultra-violet rays in air-conditioning equipment for the control of bacteria features the six new cars which the Bangor & Aroostook has placed in service on the Aroostook Flyer between Bangor, Me., and Van Buren. The new cars, three of which will be placed on each run of the train, comprise four coaches and two combined buffet and lounge units, all of which are fitted with the special air-conditioning equipment.

The coaches, which accommodate 84 passengers in individual, reclining seats, are

finished in silver-gray and cream and are fitted with large circular plate-glass mirrors at the end partitions. The buffet-cars are manned entirely by Filipino waiters and kitchen assistants.

It is reported that over 5,360 persons inspected the new equipment on its first trip through the "potato empire."

Bills Signed

President Roosevelt has signed the signal inspection bill (S. 29) and the relief rates bill (S. 2619), both of which passed at the recent session of Congress. The former, one of railway labor's "make-work" measures, authorizes the Interstate Commerce Commission to require the installation of signaling devices, while the relief rates amendment to the Interstate Commerce Act is designed to relieve railroads from charges of discrimination in situations where reduced rates are granted to meet drought or other emergency conditions.

A. C. L. Special Train Boosts Live-Stock Development

Since August 23, a special live-stock development train of the Atlantic Coast Line has been stopping at country centers located on the road for purposes of encouraging profitable live stock management and balanced, efficient farming methods. Sponsored by the road, in co-operation with the University of Georgia Agricultural Extension Service and College of Agriculture, the Coastal Plains experiment station and the United States Department of Agriculture, the train consists of seven baggage cars and coaches carrying demonstrating apparatus, live poultry, hogs, and beef cattle, and displays illustrating proper feeding, crop control, and other recommended agricultural methods.

C. N. Road-Rail Vehicle Placed in New Brunswick Service

The Canadian National placed one of its recently developed "auto-railer" vehicles in service between Moncton, N. B., and St. John, on August 30. Already in operation on several lines of the road, the auto-railer, described in the *Railway Age* of May 22, page 890, is a passenger-mail-baggage vehicle adapted for service on the highway or on rails with quick change to either.

This original New Brunswick service of the vehicle comprises an 180-mile round trip between Moncton and St. John, covered daily except Sunday. This run follows New Brunswick's first railway route, built by the European & North America in 1853, the 84th anniversary of which is scheduled within the next few weeks.

Pension Applications

Applications of railway employees for pensions were being received by the Railroad Retirement Board at the rate of about 500 a day during the latter part of August. At that time approximately 65,000 applications had been granted, including about 55,000 from former pensioners of the railroads and 10,000 from those seeking to retire since the final pension plan was enacted into law, effective July 1. Meanwhile it is thus far indicated that annuitants die at the rate of about 15 a day.

August payments to the 65,000 on the rolls during that month aggregated about $4,000,000. For the fiscal year ended June 30, 1938, the Board has available about $141,000,000 comprised of a $99,880,000 appropriation which it received in the past session of Congress and the $41,000,000 which was the railroad retirement account's unexpended balance.

Canadian Riflemen Compete

Competing the past week-end for both national and international riflery honors, Canadian railroad gunners met in Lachine, Que., on August 28 in an inter-railway Canadian match and on August 29 shot their scores to be matched with the teams of England and the United States for the International Railway Rifle trophy, described in the *Railway Age* of August 14. Neither of the latter two national teams, however, have established scores as yet.

The 20 Canadian National-Canadian Pacific marksmen composing the national team broke their own previous records when they compiled an aggregate score of 7,778 out of a possible 8,000 point in shooting for international honors.

In the inter-Canada match, the Canadian National team shot a score of 7,664 out of a possible 8,000 points, retaining possession of the S. J. Hungerford trophy.

Club Meetings

The September meeting of the Canadian Railway Club will be held in the Windsor hotel, Montreal, Que., on September 13. At that time, Dr. H. G. Littler, Canadian National Industries, Ltd., will present a paper entitled, "Scientific Research and Industry."

The Toronto Railway Club will next convene on September 27, in the Royal York hotel, Toronto, Ont. The principal speaker will be T. E. McDonell, president, Canadian Pacific Express Company, whose subject will be "Extension of Pick-up and Delivery System and Related Cartage Arrangements."

The Traffic Club of Baltimore will inaugurate the fall and winter season of its silver jubilee year on the evening of September 14 at a dinner meeting to be held at the Baltimore Country Club, Baltimore, Md. United States Senator Millard E. Tydings of Maryland will be the guest speaker.

Public Sale for the Mauch Chunk Gravity Road

The Mauch Chunk & Summit Hill gravity railroad, on default of $10,000 funded indebtedness, was to be sold at a public auction on September 2 at Mauch Chunk, Pa., by the Mauch Chunk National Bank, trustee of the road. The famous old 18-mile railroad was built in 1827 by the Lehigh Coal & Navigation Company for the purpose of carrying coal from its mines at Summit Hill down a nine-mile stretch to the Lehigh river. Uphill motive power was furnished by mules until, in 1844, two steam-powered inclined planes were built to carry the cars up Mt. Pisgah and Mt. Jefferson, the new roadway for which, added to the original track preserved for downhill gravity operation, gave the line a circuit distance of 18 miles.

In 1870 the road was abandoned as a coal carrier and leased from the Central of New Jersey, the contemporary owning company, by local operators for use as a passenger-carrying transport "specialty." Lack of patronage finally led to abandonment of the line in 1931.

San Francisco Challenger to Enter Service on September 15

A new train, to be known as the San Francisco Challenger, will be placed in service between Chicago and San Francisco, Cal., on September 15 by the Chicago & North Western, the Southern Pacific and the Union Pacific. The train will carry the latest type of reclining chair cars, modern all-steel tourist sleeping cars, and a full lounge car with bar. All cars will be air conditioned. There will be a chair car reserved for the exclusive use of women and children, and a stewardess-nurse will be in attendance on the train. Economy meals will be featured, with breakfast being offered at 25 cents, luncheon at 30 cents and dinner at 35 cents.

Westbound, the train will leave Chicago at 10:22 p.m. and will arrive at San Francisco at 8:32 a.m. on the third day, thereby approximating the schedule of the Overland Limited, which, effective also on the same date, will become an all-Pullman train, carrying a club car and full lounge car, and a stewardess-nurse instead of a maid.

Equipment Depreciation Orders

Depreciation rates applicable to the equipment of 12 roads are prescribed by the Interstate Commerce Commission in a recently-issued series of sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies. The composite percentages, which are not prescribed rates but merely the averages of such, range from 2.84 per cent for the Lorain & Southern to 8.82 per cent for the East Washington.

The largest of the 12 roads is the Gulf, Mobile & Northern, the rates for which are prescribed in a sub-order modifying a previous sub-order. Its composite percentage is 4.25 per cent derived from the following prescribed rates: Steam locomotives—owned, 4.13 per cent; steam locomotives—leased, 4.56 per cent; freight cars—owned, 3.75 per cent; freight cars—leased, 7.48 per cent; passenger cars in streamlined trains, 6.53 per cent; other passenger cars owned, 4.55 per cent; passenger cars—leased, 13.01 per cent; work equipment—owned, 3.03 per cent; work equipment—leased, 7.72 per cent; miscellaneous equipment, 24.36 per cent.

D. & R. G. W. Holds Third Annual Employees' Purchase Week

Sponsored by the Ship and Travel By Rail Club of the Denver & Rio Grande Western, the third annual Rio Grande Employees' Purchase Week was held during the period from August 25 to September 2, inclusive. The purpose of this event is to impress Denver merchants and other business men with the importance

of the purchasing power of the railroad and its employees. During the week the employees of the railroad carry cards which are given to merchants when purchases are made. The cards this year contained information showing the system payroll for the twelve months ended June 30, 1937, the Colorado and Denver payrolls for the same period, the purchases of coal, material and supplies in Colorado during the calendar year 1936, and the Colorado general and miscellaneous state taxes paid by the railroad during the same year. The card also tells the merchant that the purchases of the employee are a reminder of the value of the railroad payroll, taxes and purchases to the state, the city and the merchant. The merchant is also reminded of the fact that the employee appreciates the freight and passenger business which is given to the railroads and is told that "the more traffic my railroad carries, the more money I have to spend with you."

Herington, Kan., Celebrates Rail Jubilee

Herington, division point on the Rock Island in Central Kansas, on August 30-September 2 celebrated the fiftieth anniversary of its incorporation, which was coincidental with the construction of the Rock Island to that point and its establishment there of a division terminal.

August 31 was set aside as "Rock Island Day" in the celebration and on that day one of the new "Rocket" trains was operated into the town bearing Governor W. A. Huxman, the train later being opened for inspection.

In a special 62-page illustrated edition of the bi-weekly Herington Times-Sun, issued in connection with the celebration, events in the town's history—which closely parallels that of the railroad in the state—are set forth in considerable detail: How the founder of the town induced the railroad management to establish its terminal on his land, involving a considerable shift of the line from its original location; the building of the stone station building and roundhouse; many railroad photographs, old and new; the story of the coming of the Missouri Pacific (which preceded the Rock Island but does not have a terminal at this point); and an article "19 Copy 7" in which a former dispatcher relates the difficulties of operating the east end of the Kansas Division of the road before it was double-tracked.

The Canadian Roads in July

The Canadian Pacific in July had net operating revenues totaling $1,095,460, being $116,360 higher than in July, 1936, while operating net for the seven-month period at $9,355,614 was $1,585,514 over the corresponding period of 1936.

Gross revenues in July totaled $12,041,527, an increase of $464,097 over the $11,577,429 for July a year ago and operating expenses for the month were also higher by $347,736, rising from $10,598,329 to $10,946,066. Gross revenues in the seven months ended with July were $78,831,788, an increase of $5,210,012 over the gross of $73,621,776 in the corresponding period a year ago. Operating expenses in the period increased by $3,624,497 to $69,476,174 from $65,851,676.

The Canadian National's operating revenues in July were $16,662,985, as compared with $15,296,295 in July, 1936. Operating expenses were $15,704,086, against $15,209,091 during the similar period of last year. There was a net operating revenue of $958,899 in July, 1937, as compared with $87,204 in July, 1936, an increase of $871,695.

For the seven months of the present year, operating revenues were $111,659,299, against $100,757,723 in the corresponding period of last year. Operating expenses for the seven months were $104,032,452, compared with $98,195,480 for the similar period of 1936. Net operating revenues for the seven months of 1937 were $7,626,847, compared with $2,562,243, an increase of $5,064,604 over 1936.

Steam Railway Accident Statistics

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of May, 1937, now in preparation for the printer, will show:

Item	Month of May		5 months ended with May	
	1937	1936	1937	1936
Number of train accidents	707	555	3,933	3,660
Number of casualties in train, train-service and non-train accidents:				
Trespassers:				
Killed	251	234	921	927
Injured	252	289	928	996
Passengers on trains:				
(a) In train accidents:*				
Killed	....	1	1	5
Injured	58	37	221	217
(b) In train-service accidents:				
Killed	1	1	4	1
Injured	144	145	736	664
Travelers not on trains:				
Killed	1	....	8	7
Injured	50	70	331	337
Employees on duty:				
Killed	49	30	308	267
Injured	1,976	1,633	9,982	8,722
All other nontrespassers:†				
Killed	146	147	816	702
Injured	553	428	3,032	2,754
Total—All classes of persons:				
Killed	448	413	2,058	1,909
Injured	3,033	2,602	15,230	13,690

* Train accidents are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

† Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Number of accidents.	313	247	1,919	1,674
Persons:				
Killed	132	119	752	642
Injured	371	285	2,226	2,002

Business on Hiawatha Shows Steady Gain

That high-speed streamlined passenger trains have a lasting appeal is indicated by the fact that patronage of the Hiawatha of the Chicago, Milwaukee, St. Paul & Pacific is still showing a steady growth. From January 1 to July 31 of this year this train, which operates between Chicago and the Twin Cities, carried 188,497 paying passengers, as compared with 149,076 in the corresponding period of 1936, a gain of 39,436. From August 1 to August 15, this year, 17,892 paying passengers were carried, as compared with 16,669 in the same period of last year, an increase of 1,223. In July the train carried 34,333 passengers as against 29,261 in July, 1936, and 20,237 in the same month of 1935. Since the train went into service on May 29, 1935, it has carried a total of 636,689 paying passengers. The latter figure includes passengers carried by the train when it runs in sections and those carried by the North Woods Hiawatha in its run over the main line as far as New Lisbon, Wis.

Gross revenues of the train from January 1 to July 31 of this year were $890,255, exclusive of dining and buffet car receipts. Revenues per train mile on the same basis amounted to $3.85 and the cost of operation per train mile was $1.23, leaving a profit of $2.62 a train mile. In computing the expenses of the train, allowance was made for interest, depreciation, and maintenance of equipment, but no effort was made to determine what proportionate share of the track expenses, taxes, solicitation, and miscellaneous costs should be charged to the train.

Decree Unifies French Roads

Effective January 1, 1938, the six main-line railways of France will be operated as a unit by a newly-created National Railway Company, of which the state will be majority stockholder and the Minister of Public Works appointer and supervisor of the management personnel, through a decree issued by the cabinet of Premier Camille Chautemps on August 31. As holder of 51 per cent of the total capital stock of the company, the French government will control the affairs of the entire French main-line network. J. I. Guinard, president of the Court of Accounts, will be chairman of the board, and Cycille Grunpret, present head of the Administration Council of the State Railways, will hold the vice-presidency. The director-general in charge of operation is to be L. E. Besherais, at present a director of the privately-owned Northern Railway. To assist these appointees, there will be set up an administrative council to be composed of three important state officers, 12 state representatives, 12 nominees of the present private companies, two unofficial authorities on railroading, and four nominees of the railroad labor organizations. The board of directors of the new company, as yet unannounced, will be composed of "representatives of the general interest," according to Henri Queuille, Minister of Public Works.

Under the plan of unification, all of the present roads will transfer all properties to the national company, for which they will receive annuities until 1982 and shares in the unified company based on the value of the rolling stock they deed to it.

While the plan is close to socialization, it is not as revolutionary for the five privately-owned French railways as would be the case with roads now controlled in less degree by the state. For the greater part of their history the French companies have owned outright only rolling stock and supplementary properties, holding operating and line leases from the state for the use of right-of-ways. These latter, granted about the middle of the last century, are

due to expire individually between 1950 and 1960. There has also been close financial supervision by the state since the railway conventions of 1859 and 1883 whereby the government guarantees the interest of and controls the issuance of bonds for the construction of new lines. The policy of unification, likewise, is not new, since, in October, 1921, a law was passed providing for the creation of a common fund, similar in part to the recapture clause of the United States Transportation Act of 1920, but in addition, pledging the government to make-up operating deficits.

The railways making up the French system comprise five private roads—the Northern, the Eastern, the Paris, Lyons & Mediterranean, the Paris-Orleans and the Midi (the latter two roads have been operated jointly since 1934), and two state-owned systems—the French State and the Alsace-Lorraine. They have a total mileage of about 26,000 miles.

Supplementary to the unification decree, a plan has been submitted to the cabinet providing for co-ordination of the railways with highway, water and air transport. Among other things, it hints at a drastic regulation of trucking, especially in long-haul service in competition with rail routes.

Negro Congressman Files Complaint with I. C. C.

Charging that he was unduly discriminated against in that he was forced to ride in a "Jim Crow" car when he held a first class ticket, Arthur W. Mitchell, Negro congressman from Chicago, has filed a complaint with the Interstate Commerce Commission against the trustees of the Chicago, Rock Island & Pacific, the Illinois Central, and the Pullman Company, praying that after due hearing and investigation the commission should order the defendants to cease and desist from the practice of selling Negroes first class tickets and refusing to accord them first class accommodations. The complaint also prays that the commission will force these carriers to provide the same standard of accommodations in the "Jim Crow" cars as they provide for white patrons.

Mr. Mitchell alleges that he had purchased a first class ticket from Chicago to Hot Springs, Ark., and that at a point just west of Memphis, Tenn., he was forced by the train employees to leave his Pullman seat and ride for the remainder of the journey in a "Jim Crow" car. The train employees, in defending their action, relied upon an Arkansas statute which provides that Negroes and white persons must ride in separate cars in that state. The Arkansas statute provides that the railroads operating in that state must provide equal but separate accommodations for colored people. The basis of Mr. Mitchell's complaint is that while he held a first class ticket, the railroad did not furnish him equal accommodations.

According to the complainant, the second class car in which he was forced to ride was "filthy with filthy toilets, and so remained during the entire time this complainant was compelled to occupy it." He goes on to state that "the first class car occupied by the white persons holding tickets identically similar to the first class ticket held by this complainant was large, comfortable, free from stench and odors, well ventilated, lighted, and air-conditioned; and always clean and sanitary; while the second class car which this complainant was forced to complete his journey in was divided by partitions and used jointly for carrying baggage, train crew, and passengers; that said car was small, poorly ventilated, filthy, filled with stench and odors emitting from the toilet, and otherwise filthy and indescribably unsanitary."

Mr. Mitchell has a suit pending in the Chicago circuit court in which he is attempting to collect $50,000 damages from the three companies which he names as parties to the transaction of selling him a first class ticket. He said at the time of filing the suit that he was bringing it in an attempt to improve the conditions which he claimed existed in "Jim Crow" cars in the South.

Scout Executive Praises Rail Service for "Jamboree"

Declaring that the co-operation of the railroads was an important factor in the success of the National "Jamboree" of the Boy Scouts of America which was recently held in Washington, D. C., James E. West, chief Scout executive, in a letter to J. J. Pelley, president of the Association of American Railroads, praised the railroads for the manner in which they successfully transported the scouts who came from all parts of the United States.

"The record of the railroads," said Chief Scout Executive West in his letter to Mr. Pelley, "in transporting these scouts and scouters to Washington and return is one meriting the highest commendation. The National Council of the Boy Scouts of America is very grateful to you and your associates for the part you played in making the railroad co-operation possible. We hope that you will look back at our National Jamboree with genuine satisfaction that your co-operation was an important factor in the accomplishment of this great undertaking which will mean so much to the future of American youth. We are deeply grateful to you."

The Jamboree was attended by approximately 29,000 boy scouts, scout masters, and other officials of that organization. Practically all were transported by rail to Washington and return. Sixty-five special trains, loaded with scouts from every part of the United States, as well as many foreign countries, arrived in Washington during the Jamboree. All of the scouts were brought into Washington within a period of four days, the greatest number of trains arriving on any one day having been on June 29 when there were 30. The departure of the scouts and executives began on July 9, when 40 trains departed in one day from Washington and 24 followed the next day.

Freight Car Loading

Loading of revenue freight for the week ended August 21 totaled 781,247 cars, an increase of 3,865 cars or one-half of one per cent above the preceding week, an increase of 45,771 cars or 6.2 per cent above the corresponding week in 1936, and an increase of 155,473 cars or 24.8 per cent above the corresponding week in 1935. All commodity classifications except coal and coke showed increases over the preceding week, while all commodity classifications except coal and livestock showed increases over last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, August 21 Districts	1937	1936	1935
Eastern	151,565	145,903	127,761
Allegheny	155,471	148,915	117,168
Pocahontas	52,333	51,257	44,463
Southern	99,833	99,549	85,360
Northwestern	142,099	122,570	101,422
Central Western	119,109	109,568	99,239
Southwestern	60,837	57,714	50,361
Total Western Districts	322,045	289,852	251,022
Total All Roads	781,247	735,476	625,774
Commodities			
Grain and Grain Products	43,949	39,790	40,457
Live Stock	15,038	15,837	15,049
Coal	116,046	116,880	99,910
Coke	9,564	8,518	5,135
Forest Products	41,346	37,070	30,765
Ore	74,895	54,601	36,085
Merchandise L.C.L.	166,980	166,046	158,329
Miscellaneous	313,429	296,734	240,044
August 21	781,247	735,476	625,774
August 14	777,382	736,578	614,005
August 7	769,706	728,371	582,077
July 31	782,660	747,529	595,297
July 24	770,980	730,981	595,572
Cumulative Total, 34 Weeks	25,068,529	22,357,068	19,802,754

Car Loading in Canada

Car loadings in Canada for the week ended August 21 increased from 51,006 for the previous week to 54,761, according to the statement of the Dominion Bureau of Statistics. The total showed an increase of 4,393 over the corresponding week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
August 21, 1937	54,761	22,468
August 14, 1937	51,006	23,048
August 7, 1937	47,739	23,228
August 15, 1936	50,368	20,680
Cumulative Totals for Canada:		
August 21, 1937	1,589,051	896,001
August 15, 1936	1,449,987	762,663
August 17, 1935	1,414,664	708,524

Highway-Railroad Crossing Accidents Increase

An increase compared with the same month last year in the number of accidents and fatalities at highway grade crossings took place in May, according to the Safety Section of the Association of American Railroads. In that month there were 313 accidents, an increase of 66 compared with May, 1936. The number of fatalities resulting from those accidents totaled 132, compared with 119 in May, last year, while 371 persons were injured, an increase of 86 above one year ago.

In the first five months of this year, 752 persons lost their lives in highway-railroad grade crossing accidents, which exceeded by 110 the number of fatalities that took place in the corresponding period in 1936. At the same time there were 2,226 persons injured, an increase of 224 compared with the same period last year. A

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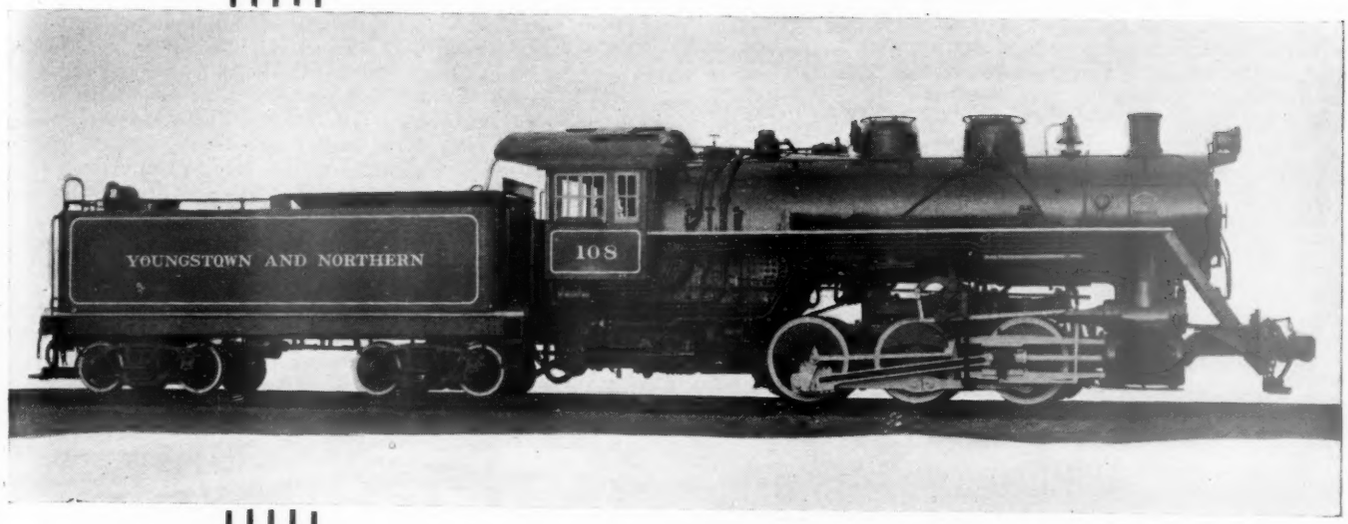

New Power recently delivered by Lima to the Youngstown & Northern R. R.

STEAM

is again called upon to provide economical switching power.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

total of 1,919 accidents took place at highway railroad grade crossings in the first five months of 1937, compared with 1,674 in the same period the preceding year.

Competitive Show for Railroad Gardeners

Railroad employees throughout the United States who do flower gardening in their spare time are invited to participate in the Second Fall Flower Show to to be staged September 17-18 at the Pennsylvania's Thirtieth Street Station, Philadelphia. The displays will be competitive, with medals to be awarded the best railroad gardeners. Details are obtainable from the Pennsylvania Horticultural Society, 1600 Arch street, Philadelphia, or from the Pennsylvania Railroad Garden Club, 15 North Fifty-second street, that city.

J. C. Davis Dies; Once Director General of Railroads

James C. Davis, who served as director general of railroads following the termination of the World War, died on August 30 at Des Moines, Iowa, at the age of 80 years. A native of Keokuk, Iowa, Mr. Davis was born on September 2, 1867. After attending the public schools at that point and the Hellmuth Boys' College at London, Ont., he entered the law office of C. T. Lomax, Keokuk. Being admitted to the bar in 1877, he practiced law at Keokuk until 1903, and from 1881 to 1883 he was city solicitor at that point.

On January 3, 1903, he was appointed general attorney for the Chicago & North Western for the state of Iowa, with headquarters at Des Moines, which position he held for sixteen years or until 1918, when he was appointed general solicitor of the North Western under the federal administration, with headquarters at Chicago. In July, 1920, he joined the United States Railroad Administration as general counsel, holding this position until March 26, 1921, when he was appointed by President Harding to the position of director general of railroads in charge of the liquidation of the affairs of the railroad administration and also as the statutory agent against whom suits were brought arising from federal control of the railroads. He resigned in 1925.

Rail Brotherhoods Protest Motor Carrier Hours-of-Service Report

The four railroad train service brotherhoods have filed with the Interstate Commerce Commission a brief of exceptions to the proposed report of Examiner R. W. Snow on hours of service for motor carrier employees. The Snow report, which was outlined in the *Railway Age* of July 24, page 108, recommended flexible hours of service regulations, providing as maxima a 60-hour week or not more than 70 hours in any period of eight consecutive days with limits of 15 hours "on duty" and 12 hours "at work" in any period of 24 consecutive hours. Also, the sleeper cab would be sanctioned.

Subscribing to the brief of exceptions are the Brotherhood of Locomotive Engineers, the Order of Railway Conductors, the Brotherhood of Locomotive Firemen and Enginemen, and the Brotherhood of Railway Trainmen. It sets forth that "many of the statements found in the report are unwarranted in the light of the evidence," and cites particularly the examiner's position that only safety of operation might be taken into consideration in limiting hours of service. To this theory "most emphatic exception" is taken, as the brief goes on to quote from the Motor Carrier Act's declaration of Congressional policy "to foster sound economic conditions" in the highway field. That, it is contended, means good management, and good management "in this day and age contemplates decent and humane working conditions."

Next comes a reference to the act's proscription of "unfair and destructive competitive practices"—this as an answer to the examiner's intimation that some motor carriers can't remain in business if forced to maintain "reasonable" working conditions. If such operators exist the railroad brotherhoods think that the sooner they "apply their talents to other fields" the better conditions will be for all concerned.

Coming to specific exceptions the brief objects to that part of proposed Rule 1 which provides that the time spent in a sleeper cab shall not be included in computing the time an employee is on duty. The sleeper cab is condemned and the suggestion is made that if its use be permitted at all, it should be limited to the transport of live stock and perishables. The hauling of household furniture in trucks with sleeper cabs "has become an employment racket" the brief says. Objection is also voiced to Rule 1's provision for only nine hours off duty between shifts; it is asserted that the off-duty period should "surely be not less than 10 hours."

Rule 2's proposal to fix a 15-hour "on duty" limit in any consecutive period of 24 hours is called "unreasonable" and one which "won't promote safe driving." The brotherhoods believe that the "on duty" limit should be eight hours with reasonable leeway to care for emergencies. The foregoing is also applied to the 12-hour "at work" limit proposed in Rule 3.

Exception is taken to that part of proposed Rule 5 which would permit a motor carrier to file merely monthly reports showing employees' time "on duty" and "at work." Also, to the inclusion in Rule 7 of "accident" without further qualification as authorizing work beyond the prescribed hours. The former, the brief says, won't permit effective enforcement, while the latter "will be unwarrantedly used to excuse over-work."

R. R. Ferry Set-up Largest in World

(*Continued from page 315*)

to 100 miles in length. A fleet of some 20 large and powerful steamers maintains this service throughout the year, all of them being built as ice-breakers because of the conditions under which they are forced to operate in the winter months.

Some idea of the importance of this Lake Michigan service may be gained by the fact that in 1935, at the port of Milwaukee, Wisc., alone, the car ferry tonnage aggregated 1,494,887 tons, while all routes in one recent year handled 4,400,000 tons of freight and 14,000 passengers. Other car ferries operate on Lake Erie and Lake Ontario.

Car ferries long served points along the Mississippi and Ohio rivers as well as other streams. While some of these have been discontinued due to the construction of bridges, there are still some important railroad car ferry operations in and around New Orleans, La., Baton Rouge, Natchez, Miss., and certain other points. Until the opening of the New Orleans bridge, in 1935, complete passenger trains were ferried across the Mississippi river at that point in one operation, and similar water crossings were necessary elsewhere.

New York City still looks to the car ferries of the railroads for much of its daily food supply and other necessities. Located on Manhattan Island, it is dependent to an extent on this service of the railroads for the movement of freight cars to and from the various rail-and-water terminals or pier stations, of which there are nearly 40. Hundreds of cars are handled on these ferries or floats daily between Manhattan Island and the mainland. For many years, prior to the construction of the Hell Gate bridge, through passenger trains between Boston, Mass., and Washington, D. C., were ferried across New York harbor.

There are likewise car ferry operations at other Atlantic seaboard ports, but none is operated on such a large scale as at New York. Boston, Baltimore, Md., and Philadelphia, Pa., and various other cities have these facilities available for the handling of commerce, while across the lower Chesapeake Bay, ferry service is maintained between Cape Charles, Va., Old Point Comfort, Portsmouth, Newport News and Norfolk. Freight cars, but not passenger trains, are ferried across the bay there, while passengers and automobiles are handled in steamers that have been streamlined "in keeping with the latest in railroad equipment."

In addition, there is operated from Port Everglades, Fla., an ocean car ferry to Havana, Cuba, a distance of about 270 miles. Prior to the hurricane in the fall of 1935, this service was maintained from Key West. The boats in this service, similar in many respects to those operating on Lake Michigan, handle from 26 to 30 freight cars at a time but do not accommodate passengers or automobiles. Another ocean-going service, for the transportation of freight cars, is maintained between New York, Havana and New Orleans with specially built vessels that can handle as many as 100 freight cars at a time. Car ferries play an important part in the handling of commerce at San Francisco, Calif., Oakland, Seattle, Wash., and other ports on the Pacific. Canadian railroads, too, from their terminals at Vancouver, B. C., and their Atlantic seaboard outlets operate car ferries as connecting links of their rail facilities.

In Europe, Asia, Africa and South America, there are a number of car ferry links in railway routes. One of the newest of these is that which recently opened between Dover, England, and Dunkirk,

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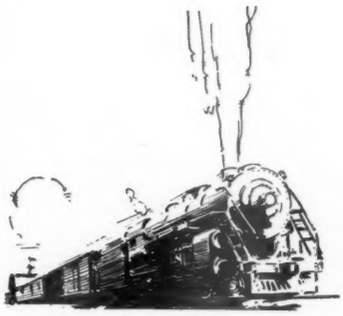
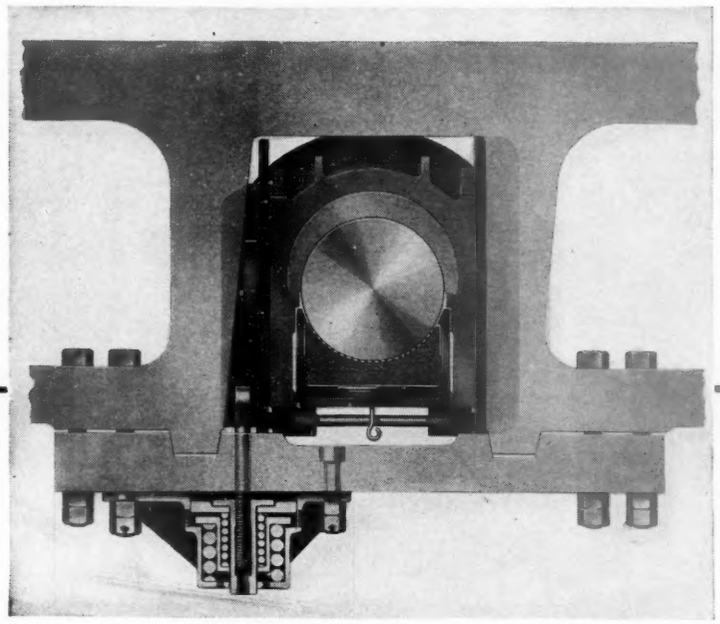
MAINTAINING DRIVING BOX ADJUSTMENT

. . . is a complicated problem





Holding driving boxes so they do not pound and do not stick, is impossible under the old methods.

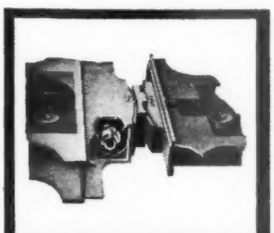
Regardless of box expansion due to temperature change freedom of vertical movement must be maintained.

Ample cushioned resistance to horizontal movement between the pedestal jaws must be provided to hold the box against pounding yet shield and cushion unusual shocks that otherwise might overstress parts and cause failure.

The Franklin Automatic Compensator and Snubber holds the box in adjustment at all times, by compensating for expansion and providing a yielding cushioned resistance to excessive blows.

It reduces maintenance, protects the track structure and vastly improves the riding quality of the locomotive. To the locomotive it is what the shock absorber is to your automobile.

Its twin, the Type E-2 Radial Buffer, prevents all slack between engine and tender and dampens oscillation between these units which further improves the riding qualities of the locomotive.



Franklin Type E-2 Radial Buffer dampens oscillation between engine and tender and makes for easier riding.

Because material and tolerances are just right for the job, genuine Franklin repair parts give maximum service life.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

France, for the handling of passenger trains. There are other foreign deep-sea car ferry lines between European countries, as well as between some of the Japanese islands and the mainland, "but in few, if any, cases are the conditions of operation as severe as those to be found on Lake Michigan, where bitter storms, heavy ice throughout the winter months and a heavy volume of traffic always to be moved often make operation difficult."

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings, and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, Westinghouse Air Brake Co., 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION. — J. F. Gettrust, 1108 New Post Office Bldg., Chicago, Ill. To meet with Car Department Officers' Association, International Railway General Foremen's Association, Master Boiler Makers' Association, and the Railway Fuel and Traveling Engineers' Association. Exhibit, September 28-October 1, 1937, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS. — E. L. Duncan, 816 McCormick Bldg., Chicago, Ill. Annual meeting, September 21, 1937, Statler Hotel, Boston, Mass.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y. Annual meeting, November 8-9, 1937, Hotel Everglades, Miami, Fla.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 7-9, 1938, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS. — E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 14-15, 1938.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 11-13, 1937, Mayflower Hotel, Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 19-21, 1937, Hotel Stevens, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION. —E. J. Hoddy, Louisville & Nashville, R. R., Louisville, Ky. Annual meeting, December 2-3, 1937, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION. —Works in co-operation with the Association of American Railroads, Engineering Division.—Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill. Exhibit by National Railway Appliances Association, March 14-17, International Amphitheatre, Union Stockyards, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION. — M. W. Jones, Baltimore & Ohio R. R., Mt. Royal Station, Baltimore, Md. Fall meeting, October 8-9, 1937, Hotel Peabody, Memphis, Tenn.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.— R. E. Schindler, Union Trust Bldg., Washington, D. C. Annual meeting, October 18-19, 1937, Blackstone Hotel, Chicago, Ill.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS. — C. E. Davies, 29 West 39th St., New York, N. Y.
Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y. Annual meeting, September 19-23, 1937, The Greenbrier Hotel, White Sulphur Springs, W. Va.

AMERICAN WOOD PRESERVERS' ASSOCIATION. — H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting January 25-27, 1938, Congress Hotel, Chicago, Ill.

ASSOCIATION OF AMERICAN RAILROADS. — H. J. Forster, Transportation Bldg., Washington, D. C.
Operations and Maintenance Department. —J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.
Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Safety Section. — J. C. Caviston, 30 Vesey St., New York, N. Y.
Telegraph and Telephone Section — W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, Oct. 5-7, 1937, Medinah Club, Chicago, Ill.
Engineering Division. — Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill. Exhibit by National Railway Appliances Association, March 14-17, International Amphitheatre, Union Stockyards, Chicago, Ill.
Construction and Maintenance Section. —Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill.
Electrical Section — Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 27-28, 1937, Hotel Sherman, Chicago, Ill.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, April 5-7, 1938, Roosevelt Hotel, New Orleans, La.
Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.
Freight Claims Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.
Car-Service Division — C. A. Buch, Transportation Bldg., Washington, D. C.
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
Accounting Division. — E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1938, Toronto, Ont.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, October 14-15, 1937, Roosevelt Hotel, New Orleans, La.
Traffic Department. — A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, 1938, St. Louis, Mo.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS. —Jos. A. Andreucetti, C. & N. W. Ry., 1519 Daily News Bldg., 400 W. Madison St., Chicago, Ill. Annual meeting, October 27-28, 1937, Hotel Sherman, Chicago, Ill. Exhibit by Railway Electrical Supply Manufacturers' Association.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB. — C. R. Crook, 2271 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, Clearing, Ill. Annual meeting, September 28-29, 1937, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO. —E. G. Bishop, Illinois Central System, East St. Louis, Ill. Regular meetings, third Tuesday of each month except June, July and August, Hotel Statler, St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month except June, July and August, Hotel Statler, Buffalo, N. Y.

INTERNATIONAL RAILWAY FUEL ASSOCIATION. — (See Railway Fuel and Traveling Engineers' Association.)

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—F. T. James (President), General Foreman, Delaware, Lackawanna & Western, Kingsland, N. J. Annual meeting, September 28-29, 1937, Hotel Sherman, Chicago, Ill.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION. — A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, September 29-30, 1937, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 806-808, 13th and E Sts., N. W., Washington, D. C.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.— C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit at A. R. E. A. Convention, March 14-17, 1938, International Amphitheatre, Union Stockyards, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB. — W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB. — D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB. — William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, except June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass. Annual meeting, October 19-20, 1937, Hotel Cleveland, Cleveland, Ohio.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill. Annual meeting, September 28-October 1, 1937, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION. —J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. To meet with Mechanical Division and Purchases and Stores Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty (Ass't Secy.), 319 N. Waller Ave., Chicago, Ill. Annual meeting, September 14-16, 1937, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS. — M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 9-10, 1937, Hotel Richmond, Richmond, Va.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB. —A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—H. W. Leighton (President), H. W. Leighton Company, 565 W. Washington St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION. — D. J. Higgins, Gardner-Denver Company, 332 S. Michigan Ave., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—(See Railway Fuel and Traveling Engineers' Association.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

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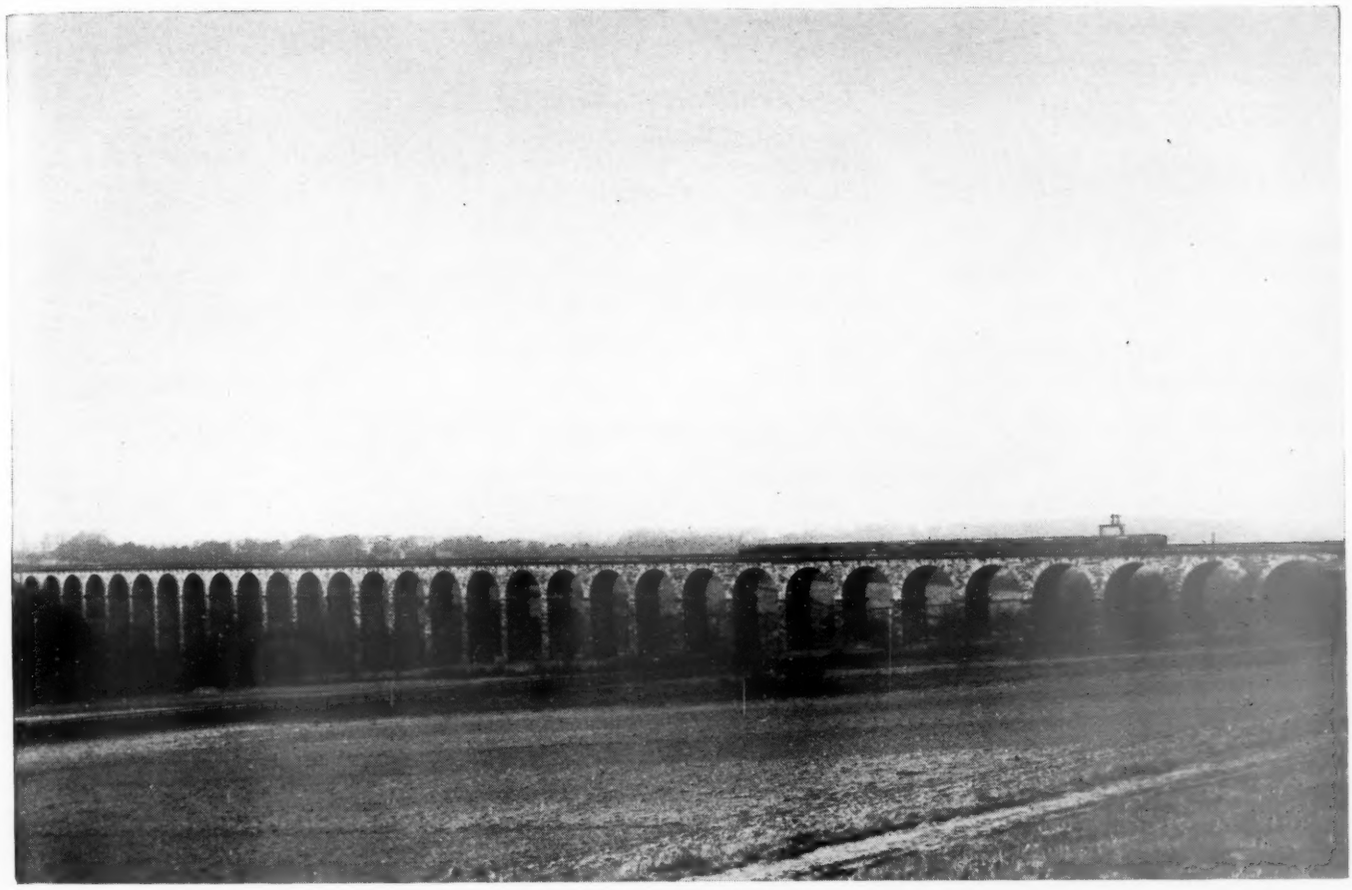
NO. 30 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



CRIMPLE VIADUCT

HARROGATE, ENGLAND

The Crimple Viaduct near Harrogate, England, is an important link on the London and North Eastern main line between the industrial center of Leeds and the spa resort of Harrogate. It crosses Crimple valley at a height of 110 feet and has 31 arches each 50 feet in span. It is built of brick with stone facing. » » » The Security Sectional Brick Arch for the locomotive firebox is the first major step in reducing fuel costs. It has had an important influence in the improved design of the modern locomotive firebox and is essential to the successful operation of larger modern power.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists » » »

Equipment and Supplies

Carriers Boost Month's Buying

Locomotive and freight equipment orders rise during August; totals high

According to issues of the *Railway Age* for August, the carriers during that month placed orders for 39 locomotives, 1,490 freight cars and one passenger-train car, as compared with the 3 locomotives, 1,030 freight cars and 14 passenger-train cars purchased during the previous month, and the 3 locomotives and 3,225 freight cars (no passenger equipment orders placed) ordered in August, 1936.

The requisitions for 39 locomotives—one steam, one electric and 37 Diesel-electric—booked during the month carry the total motive power buying for the year thus far to 270 units, or more than double the number of locomotives ordered during the corresponding eight months of 1936. At the end of August there were also contemplated purchases of 4 locomotives. The month's export market saw the sale of one Diesel-electric locomotive.

Orders placed for 1,490 freight cars in August bring the total for 1937 to 47,610, as compared with 34,254 cars ordered during the corresponding period of 1936. At the close of the month there were also contemplated purchases of, or inquiries outstanding for, 900 freight cars. A foreign buyer entered inquiries for 300 cars.

The purchase of one passenger-train car during the month brings the figure for 1937 thus far to 471 cars, as compared with a total of 181 for the same eight months of 1936.

Domestic Equipment Orders Reported In Issues Of The Railway Age In August, 1937

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
Aug. 14	Jones & Laughlin Steel Corp.	1	0-4-0	American Locomotive Co.
Aug. 21	South Buffalo	6	Diesel-electric	American Locomotive Co.
Aug. 21	Steelton & Highspire	1	Diesel-electric	Electro-Motive Corp.
Aug. 21	Philadelphia, Bethlehem & New England	4	Diesel-electric	Electro-Motive Corp.
Aug. 21	Patapsco & Back Rivers	6	Diesel-electric	American Locomotive Co.
		2	Diesel-electric	Electro-Motive Corp.
Aug. 21	Elgin, Joliet & Eastern	2	Diesel-electric	American Locomotive Co.
		5	Diesel-electric	Electro-Motive Corp.
Aug. 21	Atchison, Topeka & Santa Fe	2	Diesel-electric	Baldwin Locomotive Works
		3	Diesel-electric	American Locomotive Co.
		6	Diesel-electric	Electro-Motive Corp.
Aug. 28	Niagara Junction Ry.	1	Electric	Baldwin-Westinghouse

FREIGHT CARS

Aug. 7	Peoria & Pekin Union	25	Hopper	General American
Aug. 14	Sun Oil Co.	25	Tank	General American
Aug. 14	Peoria & Pekin Union	25	Gondola	Pressed Steel
Aug. 21	Utah Copper Co.	15	Dump	Austin-Western Road Machinery Co.
Aug. 21	Texas & Pacific	500	Box	Pullman-Standard
		100	Hopper	Bethlehem Steel
Aug. 28	Cambria & Indiana	500	Hopper	Bethlehem Steel
		300	Hopper	American Car & Foundry

PASSENGER-TRAIN CARS

Aug. 28	Pennsylvania	1	Dining	Edward G. Budd Mfg. Co.

LOCOMOTIVES

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered one snow plow from the Russell Snow Plow Company.

FREIGHT CARS

THE UTAH COPPER COMPANY has ordered 3 caboose cars from the Pacific Car & Foundry Company. Inquiry for this equipment was reported in the *Railway Age* of July 10.

THE EGYPTIAN STATE RAILWAYS is inquiring for 20 flat cars and 20 low side gondola cars, of 30 tons' capacity. A. S. Bobby is chief mechanical engineer, Cairo, Egypt.

IRON AND STEEL

LEHIGH & NEW ENGLAND.—A contract has been given to the Phoenix Bridge Company for 70 tons of structural steel for use in the construction of a 67 ft. through plate girder bridge at Lehigh Gap, Pa. F. H. Clement & Co., Bethlehem, Pa., are the contractors.

CENTRAL OF NEW JERSEY.—A contract has been given to the Bethlehem Steel Company for 205 tons of structural steel to be used in connection with the construction of bridges and highway depressions at Elizabethport, N. J. The Franklin Contracting Company, Newark, N. J., are the contractors.

COMPLETION OF A 39-KILOMETER (24-mile) link of the main line of the Manila Railroad (Philippine Islands) closing the gap between Manila and Legaspi, is expected by the end of the year. During 1936 the Philippine government subscribed $150,000 to the capital stock of the railway, with the understanding that an additional $350,000 would be subscribed later for construction of the new section. Rails and bridge materials are being secured mainly as salvage from abandonment of unremunerative branch lines.

Supply Trade

F. E. Van Hoesen, vice-president in charge of sales of the **Coach & Car Equipment Corporation,** Chicago, resigned on August 26.

At a foreclosure sale at Monroe, Mich., on August 24, the **Newton Steel Company** was sold to the **Republic Steel Corporation,** Cleveland, Ohio.

Jack Ryan and **Bill Rosser** have been appointed special sales representatives of **Iron & Steel Products, Inc.,** Chicago, with headquarters in the city sales office of the company at Chicago.

At a special stockholders' meeting of the **Greenville Steel Car Company,** Greenville, Pa., subsidiary of the **Pittsburgh Forgings Company,** on August 21, **Francis A. Callery** and **J. E. McKelvey** were elected directors in place of **E. S. Templeton** and **Wells Fay,** resigned. **Edwin Hodge, Jr.,** was elected chairman of the board, and **John C. Bane, Jr.,** secretary of the company. The other officers were re-elected.

W. P. White, 1208 N. Broad street, Philadelphia, Pa., has been appointed district manager in charge of steel and tube sales in the eastern and southern Pennsylvania district by the **Steel and Tube division** of **The Timken Roller Bearing Company,** Canton, Ohio. **C. H. Kuthe** will assist Mr. White. **A. R. Adelberg,** district manager, in charge of sales in New York City, with office at 165 Broadway, will supervise steel and tube sales in the Philadelphia district, as well as in the New York City area.

Joseph T. Ryerson & Son, Inc., Chicago, have announced a unique system of selection and stocking of steels known as the "Ryerson Certified Steel Plan." It undertakes to select entire heats of steel that have particularly desirable qualities, make thorough tests and give the user a report on the analysis, tests, etc. The plan, which is of particular value in connection with alloy steels that usually require heat treatment before use, may be summarized as follows:

There is available from warehouse stock alloy steel which has been selected to meet specifications much closer than the standard S.A.E. ranges and is accurately controlled in regard to grain size and other hardening characteristics. All bars except very small diameters are identified by letter symbols stamped on the ends of the bars for purposes of positive identification. Small bars are tagged. All bars have been metallurgically tested and the results of these tests, which cover both chemical analysis and heat-treatment response, are tabulated and transferred to similarly identified data sheets. When a shipment is made to a user, a data sheet for the bars shipped is put in his hands in sufficient time so that it can be transferred to the heat-treating department before that department is called upon to subject the steel to heat treatment.

The plan simplifies the heat-treating de-

Continued on next left-hand page

Choose the BEST Boiler for Your *New* Power

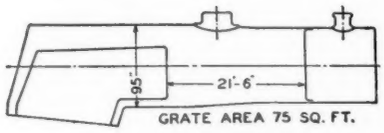
The tabulation below compares two typical boilers in actual service, with the same outside diameter and length, one equipped with the type "A" superheater and the other with the type "E" superheater.

The increase in evaporating surface, made possible with the type "E" superheater design in the same size of boiler, is quite substantial.

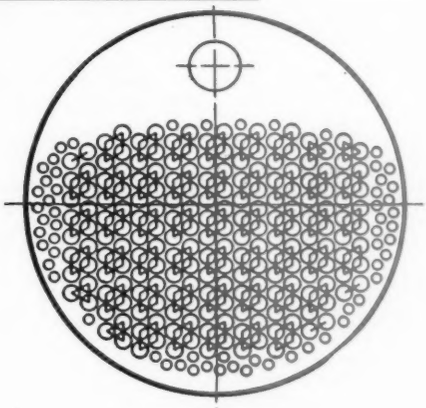
An increase of from 8% to 14% in evaporating surface, and from 50% to 80% in superheating surface is usually possible.

ITEM	TYPE "A" Superheater	TYPE "E" Superheater	INCREASE	INCREASE Per Cent
Tube and flue heating surface	4,200 sq. ft.	4,641 sq. ft.	441 sq. ft.	10.5
Superheating surface.....	1,164 sq. ft.	2,088 sq. ft.	924 sq. ft.	79.3
Gas area.....	1,337 sq. in.	1,374 sq. in.	37 sq. in.	2.76
Steam area.....	51.3 sq. in.	67.06 sq. in.	15.76 sq. in.	30.7

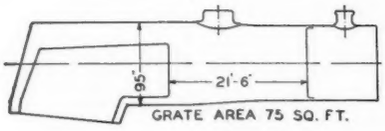
TYPE "E" SUPERHEATER



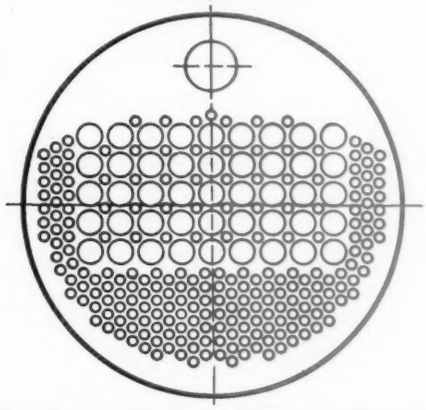
TYPE "E"



TYPE "A" SUPERHEATER



TYPE "A"



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THE SUPERHEATER COMPANY

A 1173

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partment's problem and the purchasing department's work is made easier because it will not receive reports from the heat treating department to the effect that the steel was either more or less responsive than previous lots. It is expected that this plan will save time and money for users of alloy steel and assure far more uniform results than were previously attained. A booklet describing the plan and its advantages in detail is now being prepared and copies will be sent to steel users, including railroads, on request.

OBITUARY

Thomas Hall Jessop, for a number of years eastern injector representative of William Sellers & Company, Incorporated, Philadelphia, Pa., died on August 31, at Harrisburg, Pa.

Samuel D. Rosenfelt, who retired on January 1, 1937, as representative for the **Franklin Railway Supply Company** at St. Louis, Mo., died at St. Luke's hospital at that point on August 29 of a heart ailment. At the time of his retirement, Mr. Rosenfelt had been associated with the Franklin Railway Supply Company for 15 years.

Clarence E. Irwin, a sales agent at St. Louis, Mo., for a number of railroad supply companies, died at that point on August 25 after a brief illness. He represented the **American Fork & Hoe Company,** the **Lundie Engineering Corporation,** the **Nordberg Manufacturing Company** and the **Railway Utility Company.**

Construction

BALTIMORE & OHIO.—A contract has been given to McCloskey & Co., Philadelphia, Pa., for the reconstruction of Pier No. 12 at Philadelphia, to cost about $300,000.

CALIFORNIA DEPARTMENT OF PUBLIC WORKS.—Plans are now being prepared by the California Department of Public Works, Division of Highways, for the construction of a subway to carry the Bayshore highway under the tracks of the Southern Pacific at a point north of San Jose, Cal. An amount of $200,000 has been included in the grade-crossing program fund budget for this project. Plans are also being prepared by the division for a subway to carry the Altamont Pass road under the tracks of the Western Pacific at a point near Redmond, Cal. This project, which will cost about $175,000, will be constructed on a relocated portion of the highway. Two other grade separations, both overhead structures, will be required on this project—a viaduct to carry the highway over the tracks of the Southern Pacific and the Western Pacific at Greenville, Cal., to cost $177,000, and a road elevation over the tracks of the Southern Pacific near Redmond, to cost $30,000. Requests for bids on these projects, which are part of the federal grade-crossing program, will be issued in the near future.

LEHIGH & NEW ENGLAND.—A contract has been given to F. H. Clement & Co., Bethlehem, Pa., for work in connection with the reconstruction of an underpass including construction of a 67-ft. through plate girder bridge with solid floor, replacing a 24-ft. concrete arch over Highway Route No. 471 at Lehigh Gap, Pa., to cost about $35,000, exclusive of maintenance of traffic or laying and ballasting track over new structure, or any work in connection with the highway. The work involves the use of 70 tons of structural steel.

NEW YORK CENTRAL.—A contract has been let to James Stewart & Co., Inc., New York, for reconstructing the stock yard building at 41st street, New York City.

NEW YORK CENTRAL.—Orders amending the plans for the elimination of the Allegheny street and Railroad street crossings of this road in Corfu, N. Y., have been adopted by the New York Public Service Commission. The grade of the highway at Allegheny street is to be lowered and carried under the changed grade of the four tracks; Railroad street crossing is to be closed and traffic diverted over a new lateral highway to Allegheny street.

NEW YORK CENTRAL.—The New York Public Service Commission has ordered the elimination of the crossings at Erie, West Seneca and Church streets and the terrace grade crossings on the Niagara Falls branch of this road in Buffalo, N. Y. The order directs that the crossings be eliminated by relocating part of the tracks and a previous order for eliminating the crossings by a different method was set aside. The plan proposes to remove the tracks for about 3,600 feet and relocate the railroad between certain points by a route that will pass under the lower terrace and Erie street, which are to be elevated, and thence on the site of the old Erie canal to a point near Wilkinson street. The passenger station will be located immediately southeast of the proposed Erie street bridge. The lower terrace will be carried over the new location of the railroad on a structure, with its north approach at about West Seneca street and the south approach ending at its junction with the old Erie canal lands. Erie street will be carried over the new location of the railroad on a structure which will be from near the lower terrace to Peacock street. The cost is estimated at about $2,000,000. The Buffalo Commission and the railroad company are to prepare the plans.

PENNSYLVANIA.—A revised estimate of cost placed at $210,177, exclusive of land and property damages, for the elimination of the Ayer street crossing of this road in Montour Falls, N. Y., has been approved by the New York Public Service Commission. The commission also approved a low bid of $191,700 submitted by A. S. Wikstrom, Bound Brook, N. J., for the elimination, and directed the railroad to award the necessary contract and begin the work as soon as practicable. See *Railway Age* of June 5, page 961.

Financial

AKRON, CANTON & YOUNGSTOWN-NORTHERN OHIO.—*Reorganization.*—Examiners J. V. Walsh and P. A. Conway of the Bureau of Finance of the Interstate Commerce Commission, in a proposed report to the commission, have recommended that it approve a plan of reorganization of these two roads which would provide for their consolidation and the creation of a new capitalization for the two companies which would reduce the fixed interest requirements from $364,731 annually to approximately $234,000. According to the proposed plan, the capital structure of the new company as of April 1, 1938, would consist of $450,000 of undisturbed equipment obligations and trustees' certificates, $4,700,000 of new consolidated mortgage 4½ per cent bonds, $2,793,750 of 5 per cent preferred stock and 71,592 shares of no par value common stock.

Holders of existing Northern Ohio bonds would receive 40 per cent of the principal and unpaid interest in the new mortgage bonds and 65 per cent in preferred stock. Holders of Akron 6's would receive 100 per cent in new mortgage bonds and 30 per cent in preferred stock. Holders of the Akron 5½'s would receive 100 per cent in new mortgage bonds and 25 per cent in preferred stock. Bank claims and that of the Railroad Credit Corporation would be taken care of by one share of no-par common stock for each $30 of claim. The plan provides for the reservation of 26,354 shares of no-par common stock for issuance to the Nickel Plate, while the existing common stock would be replaced by 1.62 shares of new stock for each share of the old stock.

ARKANSAS VALLEY INTERURBAN.—*Reorganization.*—The Bureau of Finance of the Interstate Commerce Commission has recommended, in a proposed report, that Division 4 of the commission refuse to approve a plan of reorganization of this company at this time, without prejudice to further proceedings. The proposed report also recommends that the commission refuse to submit a plan of reorganization of its own in view of the fact that the present earnings of the road are insufficient to assure the payment of operating expenses.

BALTIMORE & OHIO.—*R.F.C. Loan.*—The board of directors of the Reconstruction Finance Corporation has approved a loan of $5,000,000 to this company which will be used to meet maturity on September 1 of approximately that amount of general mortgage bonds of the Buffalo, Rochester & Pittsburgh. The Interstate Commerce Commission has already approved the loan for a period ending not later than September 1, 1942.

BOSTON & MAINE.—*Extension of Bus Operations.*—Joint Board No. 186, in a proposed report to the Interstate Commerce Commission, has recommended that the Boston & Maine Transportation Company be permitted to operate as a common carrier of passengers and mail by motor

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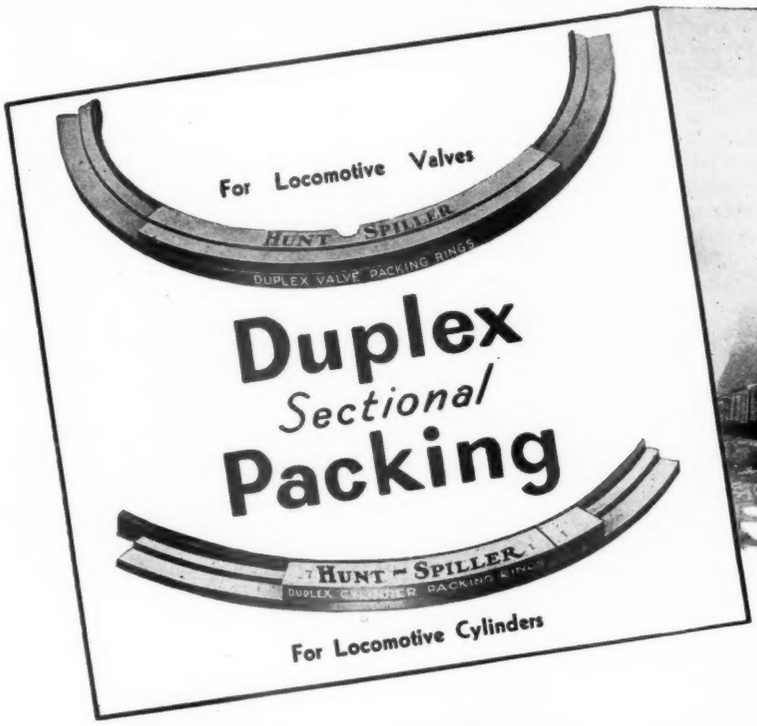

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vehicle between Wilton, N. H., and Peterboro.

CENTRAL OF NEW JERSEY.—*Bonds.*—The Interstate Commerce Commission, Division 4, has authorized this company to pledge and repledge, from time to time to and including June 30, 1939, all or any part of $1,074,000 of general mortgage 5 per cent 100-year gold bonds, as collateral security for short-term notes.

CHICAGO, BURLINGTON & QUINCY.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon a branch line between Rockport, Ill., and Pike, 6.08 miles.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Payments of Interest and Principal.*—On September 1 this company made disbursements, including interest and principal payments, of $768,851. The payments included interest on $6,336,000 of Chicago, Terre Haute & Southeastern income 5s of 1950, amounting to $158,400; interest of $73,605 and principal of $384,000 on equipment trust series "O"; interest of $26,780 and principal of $66,000 on equipment trust series "M"; and an interest payment of $60,066 on equipment trust series "L". The principal payment on the last named issue is due regularly on March 1.

MAINE CENTRAL.—*Bus Operations Approved.*—The Interstate Commerce Commission, Division 5, has found that the Maine Central Transportation Company is entitled to continue operation as a common carrier by motor vehicle of passengers and baggage over specified routes between points in Maine. The commission has also approved the continuance of service by this company over specified routes, between Bangor, Maine, and the international border near Calais, Maine, and between Bridgton, Maine, and Glen, N. H.

MINNEAPOLIS & ST. LOUIS.—*Abandonment.*—Examiner J. S. Prichard, of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that the receivers for this company be permitted to abandon that portion of a branch line extending from Laurel, Iowa, to Van Cleve, 16.1 miles. The examiner has also recommended that that part of the application seeking permission to abandon that portion of the branch extending from Newburg, Iowa, to Laurel, 9.3 miles.

NEW YORK CENTRAL.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon its Attica branch extending from Batavia, N. Y., to Attica, 10.6 miles, and to operate, under trackage rights, over a line of the Erie between the same points.

NEW YORK CENTRAL.—*Abandonment.*—This road has applied to the Interstate Commerce Commission for authority to abandon operation of the Beech Creek's 14.6-mi. line from Mitchells, Pa., to Cherry Run, together with 0.28 mi. of track at Wigton, Pa.; and the Beech Creek Extension's 2.33-mi. line at Carnwath, Pa. These two N. Y. C. affiliates have applied for authority to abandon the above lines, over which no train service has been operated for several years.

READING.—*Bonds of Perkiomen.*—This road has applied to the Interstate Commerce Commission for authority to guarantee as to principal and interest $1,924,500 mortgage bonds of the Perkiomen, provided the regulatory body grant an accompanying application of the latter for authority to extend the maturity date of such bonds from January 1, 1938, to January 1, 1951, with a reduction in the interest rate from 5 per cent to 3.5 per cent.

SAVANNAH & ATLANTA.—*Proposed Plan of Reorganization.*—Finance Examiner C. A. Bernhard of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it approve an amended plan of reorganization for this company. According to the recommended plan, the interests of the general creditors and of the preferred and common stockholders would be entirely eliminated. All the common stock and over 61 per cent of the preferred is owned by Piedmont Associates, a Delaware corporation.

The existing bonds, consisting of $865,000 of Brinson Railway 5's and $2,500,000 of Savannah & Atlanta 6's and $3,086,708 accrued interest and other items amounting to $830,947, would be exchanged for new common and preferred stock. The new capitalization would consist of an authorized issue of $2,000,000 of 4½ per cent bonds, 25,000 shares of common stock and 15,000 shares of preferred stock. New bonds would be pledged with the Reconstruction Finance Corporation as collateral for a proposed loan of $1,700,000, which would be used to retire $500,000 of receiver's certificates, for additions and betterments and for working capital.

SEABOARD AIR LINE.—*Abandonment.*—The Marion & Southern has applied to the Interstate Commerce Commission for authority to abandon its entire line—2.7 mi. from a junction with the Raleigh & Charleston near Marion, S. C., to West Marion.

SOUTHERN PACIFIC.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon the operation and the South Pacific Coast to abandon that part of the Le Franc branch extending from Campbell, Calif., to Le Franc, 3.85 miles.

Average Prices of Stocks and Bonds

	August 31	Last week	Last year
Average price of 20 representative railway stocks..	48.03	50.21	54.66
Average price of 20 representative railway bonds..	78.45	78.51	81.48

Dividends Declared

Beech Creek.—50c, payable October 1 to holders of record September 15.

Boston & Albany.—$2.00, payable September 30 to holders of record August 31.

Dayton & Michigan.—8 Per Cent Preferred, $1.00, payable October 5 to holders of record September 16; Common, 87½c, semi-annually, payable October 1 to holders of record September 16.

Union Pacific.—$1.50; Semi-annual, $2.00, both payable October 1 to holders of record September 7.

Railway Officers

EXECUTIVE

Earl Roach, general agent in the industrial department of the Nashville, Chattanooga & St. Louis, has been appointed assistant to the vice-president and traffic manager, succeeding **W. K. Tate,** who has been appointed assistant to the president. Mr. Roach's office is at Memphis, Tenn.

FINANCIAL, LEGAL AND ACCOUNTING

Howard T. Whipple, who has been appointed assistant general counsel of the Erie, with headquarters at Cleveland, Ohio, as reported in the *Railway Age* of August 7, was born on January 22, 1879, at Malone, Franklin County, N. Y. Mr. Whipple studied at Franklin academy, Malone,

Howard T. Whipple

and later attended the Albany Law school, being admitted to the New York State bar in 1906. Early in his career he served with the Title Guarantee & Trust Company, first as an examiner and then as manager of the Nassau County branch office. He entered railway service with the Erie on February 12, 1911, as an attorney, later serving successively as assistant general attorney and assistant general solicitor. From 1925 until his recent appointment as assistant general counsel, Mr. Whipple served as general attorney of the Erie.

ENGINEERING AND SIGNALING

H. E. Smith has been appointed division engineer of the Capreol division of the Canadian National, with headquarters at Capreol, Ont., succeeding **S. McIlwain,** transferred.

Effective September 1, the jurisdiction of **F. B. Wiegand,** signal engineer of the New York Central System, with headquarters at Cleveland, Ohio, was extended to include the Cleveland, Cincinnati, Chi-

cago & St. Louis. Mr. Wiegand succeeds **Carl F. Stoltz,** signal engineer of the Big Four, whose death on August 6 was reported in the *Railway Age* of August 21.

E. B. Fithian has resumed his duties as division engineer of the Wichita division of the Missouri Pacific, with headquarters at Wichita, Kan., relieving **P. P. Wagner,** who has been assigned to other duties.

H. Austill, bridge engineer of the Mobile & Ohio, has been promoted to chief engineer with headquarters as before at St. Louis, Mo., to succeed **Bernard A. Wood,** whose death on August 18 was reported in the *Railway Age* of August 28.

TRAFFIC

H. A. Budreau has been appointed general agent for the Missouri Pacific, with headquarters at Boston, Mass., to succeed **J. B. Potter,** who has retired.

S. L. Peeples, commercial agent of the Central of Georgia, with headquarters at Birmingham, Ala., has been appointed division freight agent, with the same headquarters.

P. E. Geil and **F. H. Bowers** have been appointed to the newly-created positions of assistant general freight agent on the Mobile & Ohio at St. Louis, Mo. **L. A. Marlin** has been appointed assistant general freight agent, with headquarters also at St. Louis, to succeed **R. A. Chadwick,** who has retired on pension.

T. H. Harrison, district freight and passenger agent for the Chicago, Burlington & Quincy at Jacksonville, Fla., has been appointed to the newly-created position of general agent, with the same headquarters, and the position of district freight and passenger agent has been abolished.

E. B. Ditto has been appointed division freight and passenger agent for the Southern with headquarters at Lexington, Ky., succeeding **J. N. Templeton,** retired. **J. J. Rutledge** has been appointed general agent, freight and passenger departments, with headquarters at Pittsburgh, Pa., succeeding **S. H. Wiles,** who has been assigned to special duty. **O. A. Vinyard** has been appointed district freight and passenger agent at Peoria, Ill., succeeding **E. M. Jones,** who has retired. **A. L. Day** has been appointed district freight and passenger agent with headquarters at Evansville, Ind., replacing **H. B. Hevron,** retired, and **A. Hildreth** has been appointed assistant general freight agent, with headquarters at Cincinnati, Ohio.

A. D. Williamson, general agent of the Seaboard Air Line, with headquarters at Bradenton, Fla., has retired from active duty, effective September 1, after 40 years of service with this company. **C. J. Mundee,** commercial agent at Palmetto, Fla., has been appointed district freight agent at Bradenton. The position of general agent has been abolished with the retirement of Mr. Williamson.

W. E. Barrett has been appointed district freight agent of the Mobile & Ohio, with headquarters at Pittsburgh, Pa., succeeding **George T. Dickson,** who has retired after 50 years of service. **C. C. Fleming** has been appointed Florida freight agent, with headquarters at Jacksonville, Fla., succeeding **Haiden Miller,** deceased. **S. M. Graham** has been appointed freight traffic representative at Jacksonville.

MECHANICAL

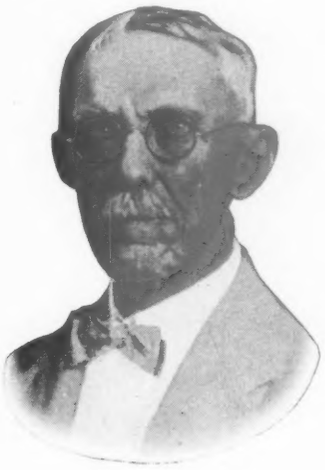
Charles Nesbitt has been appointed master mechanic of the Nevada Northern, with headquarters at East Ely, Nev., succeeding **E. E. Jarrett,** who has retired.

PURCHASES AND STORES

C. A. Keeble, who has been connected with the stores department of the Union Pacific at Los Angeles, Cal., since 1919, has been appointed purchasing agent, with the same headquarters, to succeed **R. H. Adams,** who has retired after 36 years of continuous service in the purchasing department of the road.

OBITUARY

Hunter McDonald, formerly chief engineer of the Nashville, Chattanooga & St. Louis, who died on August 24, as reported in the *Railway Age* of August 28, was born on June 12, 1860, at Winchester, Va., and studied engineering for a year at Washington & Lee University, Columbia, Tenn. He entered railway service in August, 1879, as an assistant engineer on the Louisville & Nashville, remaining with this company until December of the same year, when he left to join the engineering staff of the Nashville, Chattanooga & St. Louis. With this company he engaged in various capacities on location, construction and maintenance work for the next 10 years. In 1889 he was appointed superintendent of the Huntsville, Fayetteville & Columbia division, which position he held until 1891, when he was appointed resident engineer of the Western and Atlantic (now part of the N. C. & St. L. In 1892, Mr. McDonald was promoted to chief engineer of the N. C. & St. L., which position he held continuously until his retirement in 1931. From 1918 to 1920, during federal control of the railroads, Mr. McDonald was also chief engineer of the Tennessee Central



Hunter McDonald

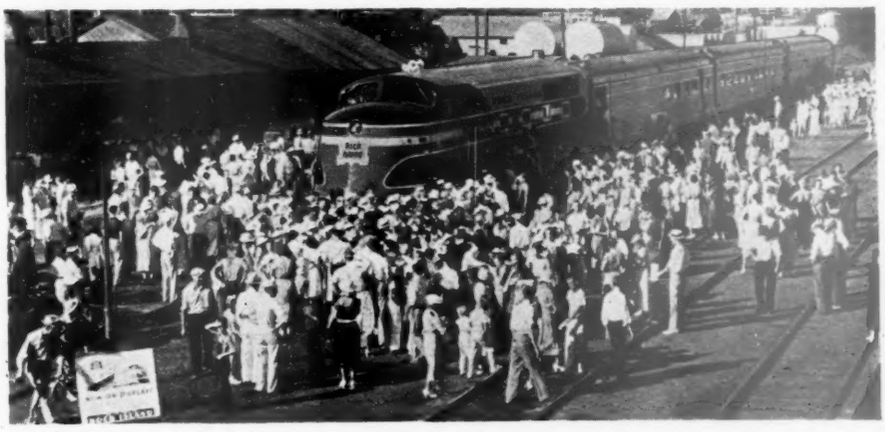
and the Birmingham & North Western. He took an active interest in the work of various engineering organizations, having been president of the American Railway Engineering Association in 1904-05, and of the American Society of Civil Engineers in 1914.

Charles L. Kimball, who retired in 1919 as assistant general passenger agent of the Pennsylvania, with headquarters at Chicago, died on August 24 at Los Angeles at the age of 88 years.

Walter Gray, general agent for the Atchison, Topeka & Santa Fe, at Los Angeles, Cal., died on August 21 at the age of 52, while enroute to Australia on an extended leave of absence, granted because of illness.

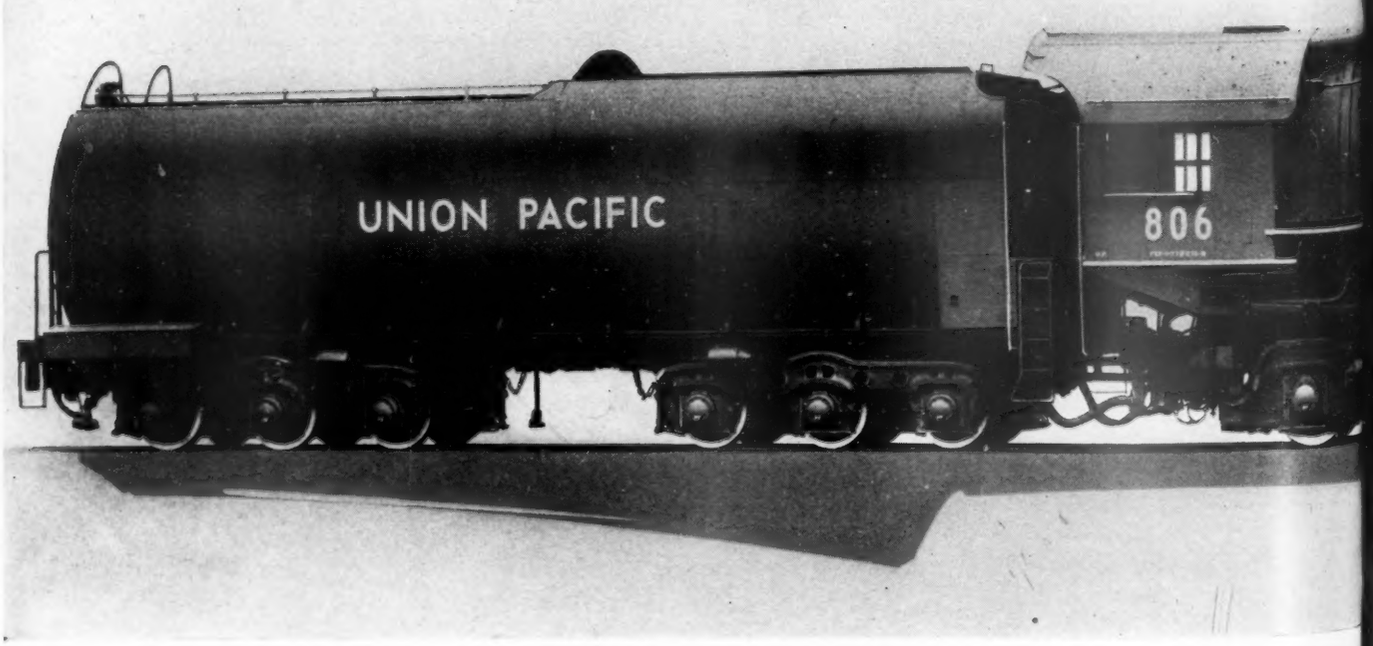
John P. Young, formerly general inspector of passenger car equipment of the Missouri Pacific, who retired about 10 years ago, died of a paralytic stroke on August 28 at his home in University City, a suburb of St. Louis, Mo.

* * *



The Town Turns Out at Albert Lea, Minn., to See a C. R. I. & P. "Rocket"

NEW POWER NEW PROFITS

Built for the Union Pacific. Twenty now being delivered

Weight on Drivers	270,000 pounds
Weight of Engine	465,000 pounds
Cylinders	24½ x 32 inches
Diameter of Drivers	77 inches
Boiler Pressure	300 pounds
Maximum Tractive Power	63,600 pounds